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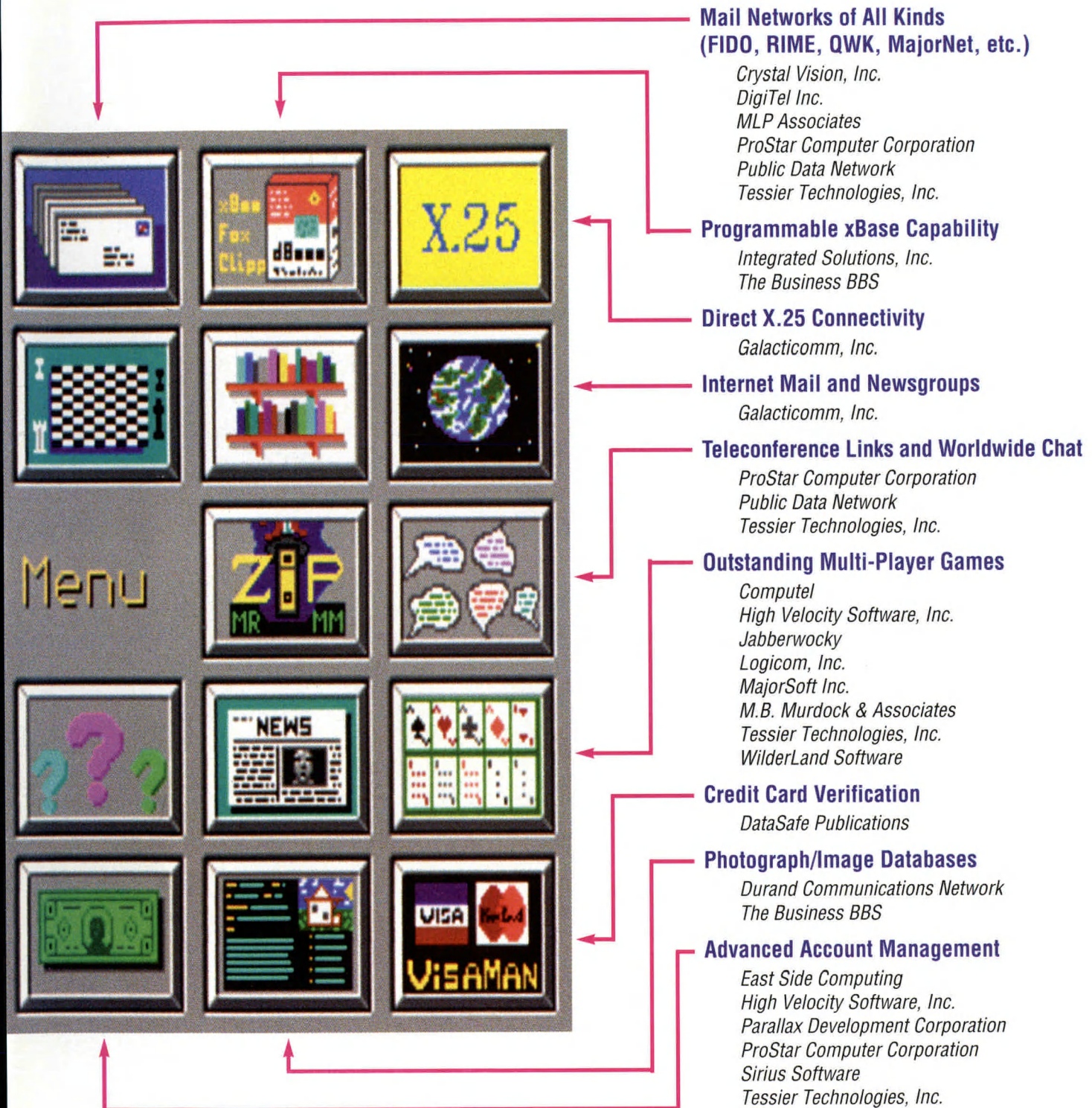
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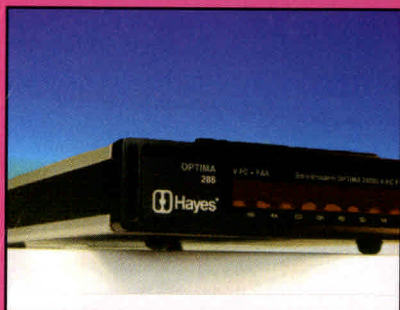
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 **GALACTICOMM**

December 1993

BOARDWATCH MAGAZINE

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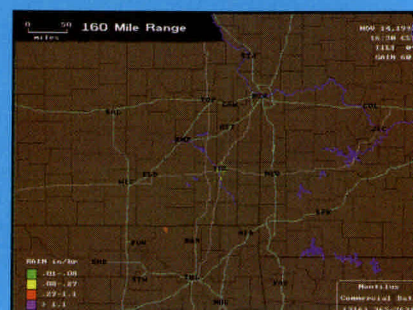


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Minutes!**

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Enters a New Age
With the Introduction of
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Fantastic Graphic
Capabilities Sure to
Fire Up Your Screen!
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EDITOR'S NOTES

TOY TIME

The PC computer industry goes through cycles. We reach a certain point where it looks like all the new ground has been plowed, the technology is maturing, and a lot of it starts to look like office equipment. Shortly after, we begin to read pundits who predict the end, the takeover of everything by big dollar interests, and noting that we've reached a whole series of "limits" they saw all along.

This all makes the futurists and visionaries quiver with new epithets and prognostications of the changing future economy. But for me, these are sure signs of what I call "toy time." That is, a new period of innovation and improvements where the fuschia marble patterned keyboards and bizarre new pointing devices give way to genuinely interesting new stuff we can play with. Aside from the Internet connection, things were beginning to look a little ordinary. And when I started to get calls about the frenzy of telephone company and cable company moves to eat each other in public, and questions about whether bulletin boards and the small entrepreneurs could survive the invincible corporate giants that would inevitably take it all over, I was pretty sure it was about time to party again.

Not to be disappointed. We just fired up our **Gateway2000 P5-60 Pentium** machine (actually it does work, and yeah, its getalong is a might spry). Local bus video and even IDE controllers are springing up everywhere with 60 million WinMarks whatever that is. They do make the screen crackle.

And we played a bit with a **Hayes Optima 288**. These new V.FC modems certainly have the same effect. Despite the fact that every time we reach a new plateau of performance in the modem industry, some jackass is there to announce that we have "reached the limit," I never quiet catch on. In the very early days, telephone company people would tell you that you couldn't do data at all on a voice line. But I really did think 19.2 was about all the telephone system could do with current analog circuits. The new V.FC

modems leap over that by about 9600 bps, and it hasn't been that long since that MARGIN was considered a data rate to die for. And while I may sound preoccupied at times with the technology and hardware to accomplish the online feats of magic, the speed of the link restricts not so much what we can do, but what we can do comfortably. There are thresholds of the ludicrous. You could transmit a feature length movie in full motion video, but it would take days, and so it is not worth doing. No one is transmitting movies now. If you could transmit one in five minutes, everyone would be.

We're not there yet, but the very concept of "limits" is under attack. It isn't easy, I'm sure, but the concept of a 28.8 kbps link was unthinkable in



the days when "600 baud is the upper limit of the 3000 Hz bandwidth of our telephone system." Since Ward Christensen's BBS went up in 1978, we've received a big leap in modem speeds every three years, from 300 to 1200, then to 2400, then to 9600, then to 14,400, and now to 28,800 bps. What evidence do we really have to believe this won't continue? Why not a 56 kbps modem? I realize the techniques to do so aren't here yet, but they never were at any stage along the way either.

Similarly the Pentium. Computer speed is a really strange thing. About two days of using the P5-60 and I found it didn't feel "fast" at all. What it did do was make the act of page layout, photostanning and retouching,

and graphics actually seem plausible. But wow - do all the other computers in the office now seem sloooooowwwwww.....

And I suppose that's the point. Speed isn't just speed for its own sake. It is enabling. It allows us to scale these thresholds of the ludicrous. Things that "could be done" at a slower pace, now can be done - for real, without having the creative flow of work or communication halted by the pause to wait on the machinery. Most of what goes on in cyberspace doesn't happen on a computer at all. It happens in your mind. This is why so many new to the online experience don't get it at first. They keep looking for it on the SCREEN and what they see is disappointing. Once you have achieved enough familiarity with the online world to develop a mental picture of where you are and what you're doing, another world opens up and it is likewise populated by other minds. Most of "virtual reality" is synaptical. True, the I/O is the screen and keyboard, and it is further true that the modems do make it possible. But what we are after here is a certain transparency of the tools to make the connection between minds easier. This move to 28.8 kbps is going to further that cause in ways I dare not predict. But this feels like a very big move.

We're also starting to get glimpses of areas equally exciting. For some time, the Amiga platform has sported a product titled VideoToaster by NewTek that allowed you to edit video with much of the dispatch of a television studio. We have begun surveying a new crop of Windows based products for the PC that do approximately the same thing. These programs allow you to edit videos, add titles, switch between several sources, display video on your PC, add sound, graphic effects, and so forth bringing to those little home videocams the same facility desktop publishing did for printing. By the time we can transmit files of video size, we should also be able to produce videos literally in the basement. It might appear that the \$250,000 video studio is about to be replaced with the \$10,000 PC setup. We'll cover this area in detail in some coming issues.

LETTERS TO THE EDITOR

But this is another leap forward to move the tools of the big dollar giants down into the hands of the grassroots "guy with idea." That is the true direction the entire PC industry has had from the very earliest days, knocking off one established area after another. Well, it still has it. And when all the cable companies and all the telcos, with IBM and Rupert Murdoch and a couple of home shopping clubs all mixed in for seasoning, have bought each other so many times they all own everything, they still won't have a clue and they still can't play. Dennis Hayes and Bill Gates each started on a kitchen table, and I guess for perhaps a few more years, I think that's still the only way you can get there from here in this industry or any of its spawnlets. If you want a billion dollar company in a new industry, that's where you have to start. The examples of gigantic established economic entities transitioning to any new industry are almost nonexistent. If it were not so, both the Internet and our televisions would be run by the railroad. Guess what...

Toy Time.

Jack Rickard
Editor Rotundus
Boardwatch Magazine

LETTERS TO THE EDITOR

Address correspondence to **LETTERS TO THE EDITOR**, Boardwatch Magazine, 8500 West Bowles Ave., Suite 210, Littleton, CO 80123 or by e-mail to letters@boardwatch.com.

Dear Jack Rickard,

I enjoy reading Boardwatch whenever I can spare some cash that is headed to Arizona State University or to the other myriad of bills a college student must face.

Which brings up a complaint I have. Of all of the topics your magazine reports on, two subjects seem to be continually skipped over. Both of these subjects will affect how we use computers, and change how we use electronic communications. They happen to be Windows NT and The Integrated Services Digital Network (ISDN).

With the promise of TRUE 32-bit multitasking, the ability to run on many microprocessors, and being a platform that has networking in mind when it was written, one would think that Windows NT would be a great boon for the Bulletin Board Universe. It would seem that software (ex. Remote Access) that needs a multitasker to run more than one node and software that is network/multi-machine dependant (ex. PC Board) would love the new environment that Windows NT would offer. But, of all the articles out there (and there are a lot of them), not one bit of information is dedicated to how this new platform can aid or deter from the world of electronic communications. (Datastorm has released a copy of ProComm For Windows NT.)

Another Avenue of New Growth is the recently supported ISDN Network, or the "Data Highway." I personally know very little about it, except that the State of Arizona and its three main universities have been given some large government grants to connect all of the community colleges to the three in-state universities (Phase one) and from there, all of the primary and secondary schools will plug in (Phase two). Also, each citizen will be able to buy access to the service, via their local telco. MCI, AT&T, and Sprint are pushing to setup and run this new network, since they already have endorsed the ISDN-1 Standard. Even a few modem companies like Hayes are jumping on the band wagon. ISDN is even supposed to tie networks and proprietary machines together into one huge network. But again, little information exists. (the only article I found was in the Computer Shopper titled, "ISDN: the future is (almost) Here," October, 1993.)

There are a lot of new products and services that are emerging from the labs. Each one holds exciting promise. But how are we to know what that promise is if no one writes about it? This is where I feel you have slacked off a little. It is great that you write about the modem wars, image compression, new Internet Links for BBS software, and the list of government involvement. But you leave your readers a little short when you do not show them where their communication is going. I read your magazine to find out

what is in store for my digital communications, since I cannot find out from other sources.

Jack Linde
AUJGL@ASUACVAX
Secondary Education
in Physics
(And hopefully a
minor in Computer
Science)

Jack:

Well, I'm glad you do. And I do apologize for not covering everything there is to be covered in each issue. I do regularly and painfully feel inadequate to the task of accurately describing all that is happening online. And I can't hold out much promise of doing better. It's growing faster than we possibly can.

That said, note that our first story on ISDN was in the spring of 1988. We have probably done a dozen of them. The heart of the problem, and my current lack of enthusiasm for this technology basically revolves around the fact that you can't have it. The long distance companies are ready willing and able to connect you. Dennis Hayes has not only produced the product before it was profitable, but has personally championed this technology for some time. He came and personally did a session on it at ONE BBSCON in Colorado Springs this past August. We've raved over it. But the heart of it is that the local telephone companies have dug their feet on this since it's announcement in 1979. And fourteen years later, we are almost at the point where it doesn't matter. With the 28.8 kbps modems announced in this issue, I'm not sure we won't actually get BETTER performance for some tasks with new modem technology than we will with ISDN. Once again, the world has engineered around the bureaucracy of the local telephone company, a theme I must note is not entirely new. At this point I am not enthusiastic about the chances for any universal deployment of ISDN. It's a shame. It ought to be fixed. But I don't know how to fix it.

With regards to Windows NT, I agree this product holds enormous promise. Actually, it does NOT make a PC a



"true" multitasker. The Intel chip just doesn't support that, and I fear you've taken on water from the hype wave. It does offer preemptive multitasking, similar to OS/2, and it does offer some promise as a 32-bit operating system. But at this point, that is all it is. The "networking it had in mind" was for all of us to put a bullet behind the ear of our Novell servers and do LAN's Dollar Bill's way. I suppose it's possible, but I'm disinclined at the moment. I've been led down the path on this topic numerous times in the past, and I guess I'm becoming a little cynical. With regards to Windows NT for communications multitasking - I'm hopeful, but I'm also from Missouri. Show me .

I suppose at a stretch I could agree in a general sense that I leave my readers short if I don't "show them where their communications are going" - though that strikes me as a bit grandiose. There are two possibilities that suggest a reply however. It is possible that I don't know, and that my judgement regarding what products and developments are important to the future of PC communications, and what are not, is in error. Over time, I would lose readership and leadership to the point of irrelevance. I have to point out that the trail is littered with the drying and bleached carcasses of companies and people who did not see the world as I see it, while we've at least doubled in size each year since 1987. We have virtually all back issues of Boardwatch available if you care to research my hit rate on predicting the future. It isn't 100%, but it ain't bad. That brings up the second possibility. Entertain the thought, however numbing, that communications perhaps isn't "going" the direction you think it is...and that perhaps explains our lack of editorial attention...

Keep reading.

Jack Rickard

Dear Mr. Rickard,

This is the first attempt I have made to send correspondence to an organization via Internet mail. I sure hope it makes it to you in one piece. I just had to send this in after reading the last issue of Boardwatch...the details are enclosed....do read on:

My trouble lately has been finding Boardwatch locally. Last month, it

almost seemed as if I were on a mission, 'to find the last available copy of Boardwatch in the greater L.A. area'. Believe me, it was not as easy as you may think.

After checking my neighborhood news stand, and finding them out, I proceeded to the Yellow Pages, and called EVERY bookstore and news stand listed, only to be chagrined by each one responding by either 'I've never heard of that magazine...' or 'sorry, we're sold out...you might try calling [the store I just called before calling you]. Can you believe the biggest news stand in L.A. (over 20 miles from my home) did not carry Boardwatch? Couldn't that be considered computer nerd blasphemy? (or something similar?)

So, after spending much fruitless time on the phone, and building up callouses on my dialing finger a guitar player could envy, I gave up. It's not that I've become a Boardwatch junkie...it's just that....well...I've become a Boardwatch Junkie. I find the other online type magazines lacking in quality and substance. Yours on the other hand, is chock full of meaty info. that I find as gripping as a Tom Clancy novel.

Needless to say, I steeled myself to believe I was not to get my 'fix' this month. Life dragged on after that...day by day...until just last night at work, a co-worker walked up to me, and plopped the October issue in my lap. Boy, let me tell you, it was like Christmas morning. Suddenly that brightened up my day. (for a still unknown reason, it had the same effect as a cold soda and pepperoni pizza being plopped in my lap, but without the mess).

I've read about half way through so far. I fear if I read too fast, I may get hiccups or something. The letters to the editor was a great blend of 'customer relations' and humor. "Now that you've described it in that sense, I agree with you fully...er...well mostly." echoing throughout made me chuckle. I DO see your point, and agree with you...er...TOTALLY. BTW, have you seen my hat? It's red and white, and the last place I saw it was at the race track.

To get back on track with the purpose of this note, I plan to send in a subscription to Boardwatch post haste. Not only do I want to be assured that I

will be able to find it, (in my mailbox each month) but to have the input and resources available to help me make my small, one line BBS a place people will call as if calling an old friend. [Can I make a plug here? The Empire BBS (818) 879-1699 2400-14.4]

Thanks again for one stupendous magazine! I couldn't make it to One BBSCON for various reasons, but will try like heck to make it next year, even if it IS on the other side of the country.

Regards,

Dave Holohan
suprdav86@aol.com
Agoura Hills, CA

Dave:

I know you meant the letter as laudatory, but it's a knife in my heart. Boardwatch was sold by subscription in the early days, and that was the only way you could get it. A local computer store asked me to sell them copies they could resell. I did. Stopped by their shop with an armload twice a month, they showed me their new stuff, we talked computers. A local magazine distributor saw the copies moving off their counter and called me. We worked out a deal and Boardwatch was the hottest selling magazine in Denver for quite some time. This put me in the mood to distribute it nationally pretty early on. It was a bit like crawling through forty miles of broken glass on my hands and knees. Most distributors, in those days, thought BBSs were a geek market of about 30 people, and all assured me it would never sell anywhere at any price. I sent a proposal to one distribution company every month for over a year. They wrote, they called, they explained why it would never sell. It was little. It was ugly. It had no market. My momma dressed me funny and I had a stutter. I was too fat. They were moving. They finally agreed to distribute it mostly to get rid of me.

Today, Boardwatch is available in a little over 7000 stores through four different national distributors. We consistently average a "sell through" between 70-80% in computer and software stores. I have a full time newsstand distribution consultant who puts out fires and tries to make it work. We've spent hundreds of hours, and thousands of dollars, to fix it. But still, on some newsstands, including the Software Etc. store across the street

from us, we are on the newsstand about 4 days per month. Copies go up. And the copies go away. And it looks like we don't exist for the other 26 days. I've tried to fix this. But magazines are not a high profit item. Most stores carry 20 or 30 titles, and some as many as 600. Most magazines sell 3 to 5 copies of a typical title per month per store. They return any "unsolds" for credit. As a result, they don't track their stocking with any frightening level of efficiency. If we tell a store manager that his 14 copy monthly draw of Boardwatch isn't enough, and he's taking six of everything else, a dubious countenance is somewhat apropos. Why is ours selling more? Most anything we say sounds a little self serving, and more than a little predictable coming from the publisher. And I get e-mail and letters precisely like yours, three times per day every day. At this point, all I can tell you is we'll do the best we can. But an entire magazine distribution system carrying thousands of titles is probably not going to change the way they do business to accommodate either you or I.

That said, there is something I'm really curious about. I just don't get this part. Boardwatch is \$3.95 per issue on the newsstand. A subscription is \$36 per year (\$3 per copy) or \$59 for two years (\$2.46) per copy, and it shows up in your mailbox, delivered to your home or office, without you having to take a single step in any particular direction, or do anything else beyond breath in the heady aroma of fresh ink on paper. A two year subscription will save you \$35.80 hard cash, MORE than enough to pay for a THIRD year - or buy a whopping big pizza ALSO delivered to your house. Yet tens of THOUSANDS of readers PREFER the same easter egg hunt each month that you describe. Since I don't really know, nor have ever claimed to know, squat about the magazine publishing business - clue me in. What piece of all this am I missing? You'll call EVERY NEWSSTAND LOS ANGELES ON THE TELEPHONE BEFORE YOU'LL COUGH THRITY SIX BUCKS AND DIAL AN 800 NUMBER!?!? You've got to be jacking me off! I personally wouldn't walk across the street to get the first report on the second coming of Christ if it was printed on gold leaf and they were a buck a pop. If they didn't mail me a copy I would still be dialing bulletin boards while everyone else had gone off to line up for the bus to Paradise and there I would sit - again clueless, unwashed, and unsaved.

*But then...I don't get out much....
Pleased you're reading anyway...*

Jack Rickard

Dear Jack:

I am a Fortress-PC sysop. And It might be nice to get some coverage of Citadel and its many clones. It is a software that has been around a long time without much recognition.

Mike Jones
MIKEJON@delphi.com

Why is that Mike?

Jack Rickard

Dear Jack,

I enjoyed your magazine enough to subscribe, keep up the good work.

I watched "Reliable Sources" today on CNN. There were two models of the "Data Highway" presented, "internet" and "Big Cable". I assume we are all familiar with the "internet" model.

What worries me is the "Big Cable" view. The "Big Cable" view is that of a 500+ channel cable system, with interaction limited to shopping, and pay-per-view. There appear to be no provisions for individuals, other than spending money, with the "Big Cable" system collecting a toll (TAX?) on every transaction. I feel that this monopoly will stifle competition, and in the end, cause us to loose yet another area of global technical dominance.

My vision of the future is that of a greatly enhanced internet. There would be continue to be competition to provide connections to the internet, driving prices and features. It is these connections, and the users of those connections, which, in fact, ARE the internet. Those who wish to be connected will have a variety of options, ranging from permanent flat-rate connections, to as-needed connections, similar to phone calls. I see this as offering the following tradeoffs for getting more bandwidth:

1. Pay more money. If you need more bandwidth, you would lease a better connection, as is currently the practice.
2. Get better compression. Compres-

sion software increases the effective bandwidth by removing redundancy from a data stream.

3. Wait for improvement. I predict a doubling of bandwidth-per-dollar AND megabyte-per-dollar every 18 months for at least 10 years.

Assuming trends continue, I predict the availability of a full-duplex, full-time, real-time video stream to anywhere on the planet will cost approximately \$50/Month by 2003, if not much sooner. I see government involvement as the only real threat to this vision.

Do others share my vision of the future? Please type!

Mike Warot - **ka9dgx@aol.com**
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For ClintonPZ
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Dear Mike:

I gather you don't yourself place much value on the Big Cable View. If you are not alone, it probably won't have much value. And it probably won't have much impact on the part of the world important to either you or I.

I've heard the annual state of the Union address describing how telephone companies, cable companies, government, Microsoft, CompuServe, and the Church of Scientology were all going to squash all this grass roots BBS business with the BIG network every year since 1979.

Call me dubious. I would offer the observation that in the online world, the direction, and the energy, is all DOWN toward the grassroots end, and out toward the most isolated user. That anything in the online world can be scaled UP in size if it encounters success, and virtually nothing can be scaled DOWN in size if it encounters failure or as bad, indifference. Most large scale attempts at muscling in with the big bucks have resulted in a power flush of cash down a rathole with little to show for it.

And where they do survive, they don't kill anything else noticeably. Prodigy

represents an enormous investment by Sears and IBM financially. It's lost a lot of money over the past few years, but also attracted a LOT of people to their service, and indeed to the online world overall. They haven't killed anything, their presence has been additive and they've raised the level of awareness among the general public of things online markedly. This is a business 101 level concept usually referred to as "Formative Stage of an Industry." Anything anyone does helps.

The activity in the future revolves around the fact that more powerful online services can be run by individuals on successively less expensive, easier to run personal computers. The Internet you know is about to undergo a powerful change based on the concept that you don't need to have a University or government agency provide the backing to run an Internet host site. You will be able to run one on a PC in your basement for relatively no dollars and little sense. CompuServe on the PC is not three years away. And everyone can run one, although not everyone can run one well. The most exciting part is that the game has garnered enough momentum and economic legs to allow these systems to really connect via something after the fashion of today's Internet protocols.

And the big guys lose again. Oh, a few may win by adopting some of the grass roots strategies. CompuServe and AOL look like nothing so much as a group of bulletin boards already linked on a common network, and they operate profitably. Prodigy is catching on. But no one is going to monopolize anything. Cable TV? A lot of activity there, just not much by way of score. What will come out of that is largely three things, and all of them look good to me. First, movies on demand. You don't have to go to the video store to rent a movie. You'll call them instead. Second, there will be 500 channels of cable video, and they don't have programming for 60 now. A secondary trend among people making their own home videos, PC editing software and equipment, and a whole slew of other tech advances is going to make the creation of really bad videos very, very easy. And we will have 500 channels of them just a push-button away. And finally, in the process of all this, we will get a high capacity fiber channel into every home - fulfilling a prediction I made in 1988 that we would get glass for BBSs riding on the back of video.

Cable monopoly? We can only hope they survive to provide the commodity channel we will use. The value-added high profit items they lust so longingly for, are forever out of their reach because of their organizational structures. Treat these poor lost company suits with a little sympathy Mike. Trust me on this one, their REAL dream is to leave the corporation and run a BBS. They call. I know.

Jack Rickard
For LimbaughPZ
Married, Male, 38.
Registered, Sedentary, Voter, Overemployed

I enjoyed reading the October 1993 issue of Boardwatch and the special coverage of One BBSCON.

Although I saw the Coconut booth in some of the pictures, I was surprised that you didn't mention the Coconut software in the Graphics section of your coverage of One BBSCON. Was this an oversight or a conscious editorial decision?

I have been looking forward to the release of Coconut 4.0 because of its support for graphics and images. From your articles, it seems like DOS based BBS software with RIP and RoboBoard are now comparable to Coconut. I haven't seen Coconut 4.0 live personally, but had heard it was quite impressive.

I wish I'd been able to attend One BBSCON — it looks like all the major vendors and industry personalities were there.

Jon Gilbert
Videotex Development Corp
jgilbert@delphi.com

Jon:

The first word on Coconut appeared in the pages of Boardwatch in 1988. At the time, they were trying to sell access to a movie schedule database in San Diego at \$5 per month. We actually talked them into releasing a BBS software product, and the one they had in 1988 was pretty glitzy for its day. We haven't noted much by way of progress in the package since. I haven't seen Coconut 4.0 live personally either, and hadn't heard anything at all about it.

All the major vendors and industry personalities were at ONE BBSCON Jon. And therein lies a bit of the problem. There were 132 vendor displays, 137 educational sessions. If you were under the misapprehension that our October coverage was comprehensive, or even adequate, let me correct you. I probably saw less of the show than most who attended it. John C. Dvorak, normally a pretty busy gent, did a better job of canvassing the floor for new stuff than I did, to my own embarrassment. We did the best job we could in trying to paint a picture of what was at the show, mostly from what I happened to see by chance. We do plan to do better. But next August, the show will be at least twice the size this one was, and I fear we'll lose again.

If Coconet has new product that makes a splash at all, I've got to believe I'll find out about it - and consequently so will you. I'm peddling as fast as I can.

Jack Rickard

Dear Jack:

I guess you're right. "The militant everybodies" *have* driven you to distraction. I can't imagine why you would otherwise perpetrate a (I hesitate to call it a) word like SPOUSETTE in your letter column.

(What's that? You say the Oxford English Dictionary lists "Spouess", "a female spouse"? Huh. I wasn't aware of that point of view. Now that you've described it in that sense, I, I...)

Charles Roth
khazad!briton!roth@uu.psi.com

Charles:

Ah.. a new reader. Welcome. By way of orientation, it's my language, I can do with it as I will. I doubt you will find the term SPOUSETTE in the Oxford English. If I recall my intention at the time, SPOUSETTE would be the opposite gender of whatever gender you assign to the genderless SPOUSE. Probably some overtones of being a miniature or younger SPOUSE. We could, I suppose extend this to include the SPOUSINA, which of course would be a minor SPOUSE or SPOUSETTE, on the off chance of child marriage.

The power of the English language is its rich abundance of words, something

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over 800,000 I'm told, and a constantly evolving vocabulary. I'm doing my part.

Jack Rickard

Greetings and Hallucination, fellow cyber-dwellers...

Apologies if there are some nasty typos; this wonderful piece of technology we call the Keyboard is about ready to be thrown off a cliff. So goes the tagline: "KEYBOARD - An instrument for entering errors into the computer." Either that, or someone's been messing with my Typematic settings. I know, excuses, excuses.

Well, I just received my first Board-watch magazine today (the analog version, no less, with real paper 'n stuff!) Kudos to Jack and all involved for a great piece of work.

So what prompts me to jump into the fray so quickly? Actually, it was Mike Ward's letter (hi, Mike, you dinosaur you! :) And like his, this letter will likely prove to be more a stream of semi-conscious thought than any sort of actual "writing".

About five years ago, when I was going to a technical school, I needed a word processor for writing essays and the like. Since I still had gobs of software from my trusty old Commodore-64 I'd blown up years before (no, really, I did! You feed 120VAC into the 5VDC power rails of a C-64 and you'll know what I mean!), I picked up a used 64 system that included a printer and a cute little 300 baud "64Modem" (pulse dialing, but it could actually auto-originate! Ooooo!) The modem sat dormant for months until, out of boredom one day, I dug up a back issue of a local computer newsletter that had a BBS list, and dived in fingers-first.

From that 64Modem to a Hayes 1200 to a Supra 2400 back to the 64Modem and lately with some generic 1200, the 64 is still pluggin' away. With the right software, it can even do 80-column, pseudo-ANSI with PC graphics! Mike's XT is almost a mainframe by comparison :)

From such humble beginnings, I now co-sysop a BBS that started out on an Atari 1040 STe and now runs four lines on a 386 under OS/2 (the Atari's still get plenty of use in our recording studio, which is where the BBS is based). I use a 286 at home to do

remote maintenance and such, but my trusty little C-64 still sits by and can always be called into service in a pinch.

Its next assignment will probably be a lighting controller. A little home-brewed hardware and some creative, integrated MS BASIC 2.0 and 6510 Assembler programming is all it takes. Remember the days when a programmer HAD to be GOOD to get incredible results out of 64k? Now, you don't have to be "neat". If your code gets too big, you just convince the poor shmucks that it's good enough to be worth buying more RAM.

Heck with a couple hundred bucks for a used XT, Mike... a used C-64 with disk drive, accessories galore and SCADS of software can be had for under \$100 these days... and you can plug it straight into your TV, no monitor or video card necessary. Okay, there's a trade off: you either run a Commodore modem, or shell out \$20 or so for a 64-User Port to Centronics interface to use your Hayes-compatible. And yes, you're typically limited to 2400 baud.

Welp, there's some more numbers for you, Jack. BTW, C-64 boards such as BlueBoard, Ivory, All-American, and so on still thrive up here in the Great White North. I've seen some 40-column C-64 graphics that would blow your average ANSI guru's mind. And where else can you find USEFUL software that'll still fit on a 170k 5.25" floppy?

Matt Ion
Technical Services
1040 MIDI & Music BBS
1:153/7040
matt@ship.net

Matt:

Thanks for writing. We actually have a BBS here in Niwot Colorado titled The Dinosaur Board that was primarily to support older computers. There's nothing wrong with wringing the last dollars value out of "senior" hardware that's had a little "experience."

Jack Rickard

Dear Mr. Rickard,

First of all, let me say that I love BOARDWATCH, and believe that it is the definitive source of information on

modeming, BBSing, and anything to do with On-Line in general.

Second, I want to also say that it took me about 3 issues to actually find out that your last name is RICKARD, and not RICHARD or RICHARDS. I think that I'm not the only person who doesn't have their eyes open all the way as letter #2 in the Oct., '93 edition shows.

Enough small talk, let me get down to the real issues here. I was absolutely enthralled by your article announcing that Wildcat! has made the internet connection. About 10 seconds after reading it, I was on the phone to Mustang Software via their 800 number ordering my own wcUUCP package at the special price. Congratulations Mustang, and congratulations Boardwatch!

I saw your list of UUCP hosts across the US and found that very helpful, however I have been trying to get hold of a host located in Canada, preferably in the Toronto area. So far I have had no luck and was hoping you could help out your loyal and huge Canadian following (O.K. so I don't have numbers or a petition to back up that last phrase, but give me some slack on this one). If at all possible, could you publish a list of Canadian hosts to help me avail the huge long distance costs that are thrust upon us modem users.

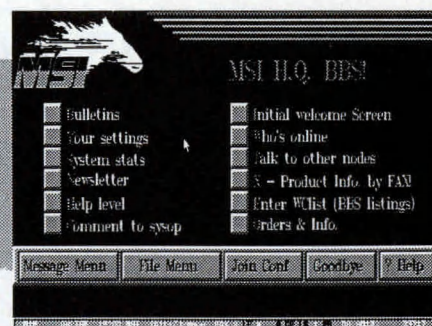
Now, one small point of complaint. As a sysop who is trying to get his little board to grow (user-wise) I find it quite unfair that your "National List Of BBSes" seems to mostly have the BIG GUYS on it! I mean is there anyone who doesn't know the number to PC Ohio, or Aquila? And if they didn't, it would be no problem to find such a number. I have recently advertised in your magazine and was hoping to find my system on your list in the upcoming issue(s).

Another problem is the fact that you don't list too many Canadian systems - whoops I forgot, you do list Canada Remote Systems, but as a rule up here in Canada, you cannot own a modem unless you join CRS, this law was passed after our Oct., 1992 Referendum. Sarcasm aside, why don't you give us Canadian guys a chance. We are a friendly lot with much to offer an American or an Eastern audience. In addition to this PLEASE, PUH-LEZ give the LITTLE GUYS a chance instead of catering to the monopolies all the time. WAIT! Here's a great

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A.J. Janschewitz
Connecticut Department
of Revenue Services

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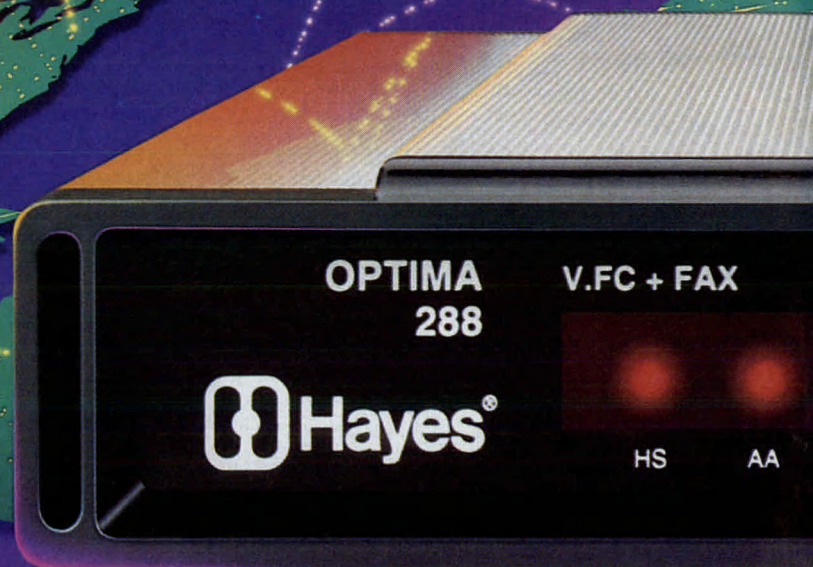
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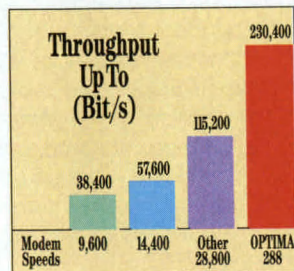
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idea, you could make a special 20 page article on Compuserve and list all their access numbers, I'm sure they need a few more users!

Sarcastic, but in a nice way,
Dan Williams
Sysop of The Adults AT Play BBS
24 Hours (416) 237-1010 Wildcat!
72604.2642@compuserve.com

Dan:

I'm going to guess you should read again. The dyslexia seems to extend beyond surnames. Many of the bulletin boards on the national list are very small, and quite a few single line systems. Size has never been any criteria at all for our national list. Your characterization of it as only for big systems simply won't hold water. That said, we are expanding it to six pages this issue.

As to Canadian systems, we have a very loyal following in Canada, and Canada is extraordinary in the level of online activity per population. I'm told it has something to do with longish winter nights and a very literate population. Whatever the reason, we've had a very strong readership in Canada for many years. Note that our November issue carried as the featured list both Calgary, Alberta, and Toronto, Ontario. I'm not sure what further I could do.

As to UUCP hosts, I'll see what I can dig up. But the heart of the problem there really isn't a lack of Canadian UUCP hosts so much as it is some pretty damaging long distance costs to span Canada from any particular place to reach one. I'll see if we can scare up a couple for that list.

Jack Rickard

Dear Jack:

I was really glad to pick up a copy of your last issue, and find a lot on the Internet listed inside. This is a little known subject that is definitely climbing to new heights. The few people I've met who have much access to the Internet love it to death. I once again wanted to thank you for taking the time to address the other half of the telecommunicating community that doesn't necessarily need a modem.

R. Matthew Watson
(BVFD Unit #1821)
Burbank Volunteer Fire Department...

"You light'em, We fight'em"

Ryan%LabA%WAYNE@auburn.uakron.edu

Dear Matthew:

Number perceptions are often amusing. There really isn't an "other half" that doesn't need modems. There is a relatively tiny minority of telecommunications enthusiasts that have local access to the Internet through their Universities or offices. The Internet proponents cite some terribly large numbers, largely by subsuming anything else online as part of the "Internet." Ultimately, it all will be to one degree or another, but the overwhelming majority of people who communicate with it DO have a modem at their end. We view the Internet as a big part of the future, mostly in providing a common backplane to all other services, from single line bulletin boards to Prodigy. And so we will continue to cover it extensively for many years to come. Perhaps at some point we won't need modems. But for the present, it's more like the other 6% than it is "the other half." In any event, I think you'll find plenty to connect to through the pages of Boardwatch now and in the future - modem or no.

Jack Rickard

Dear Mr. Rickard,

I was recently reading a news bulletin on a local BBS which included a letter to you about the Philippines. I'm writing because a close friend of mine has been trying to find an easier way to correspond with his fiance in the Phillipines, and we're trying to find a way to do it through E-mail. She lives in Metro Manila, but the problem is she doesn't have a phone. As she goes to a university there, we believe she may be able to get access to a BBS through a friend, but we have not been able to find an Internet Address for anyone in the Phillipines. Any advice would be appreciated. Thanks for your time.

Darren Mantle
Surrey, BC, Canada
darren.mantle@deepcove.com

Darren:

Actually, I'm familiar with the problem. The Philippines has few telephones, but remarkably, they do have a few Fidonet style bulletin boards. The problem is not getting mail to the Philippines, but in

getting the fiance access to the BBS locally. If she has no computer, no modem, and no phone, it does little good to get e-mail to a BBS in the Philippines.

Jack

It truly is a small world. I just read your reply to the Jojo Sybico of the Cebu City. Here I have been reading you magazine for over a year and I never knew your wife was Filipina.

My wife is from Cebu City proper. We have been married for four years and ten days and have two daughters. I too did not know there were any boards or networks in Cebu City. Now thanks to Boardwatch magazine I have a quick and easy way to send messages to my wife's family.

I am running a single line system here in Renton, Washington (206)226-6718 (got to get the plug in) and I am currently waiting for my permanent node assignment. They seem to be a bit slow up here in the great northwest. I have had my request in for over three weeks.

I am running SynchroNet software and was wondering if you might not be able to apply a little more coverage to it. I have helped set up PCBoard, WildCat, TBBS, and Searchlight software and find SynchroNet incorporates the best of all these systems. Check it out.

Keith Nichols

P.S. There is another major manufacturer getting ready to enter the V.Fast market. I can not tell you their name, but they are beta testing on a BBS operated by a friend of mine in Key West, Fl. His number is (305) 294-3351.

Keith:

There are a lot of manufacturers getting ready to enter the V.Fast market, and we'll be watching them pretty closely. I saw a pretty impressive display by SynchroNet at ONE BBSCON, but couldn't get anyone there to talk to me about it. We'll try to find out more. I agree, it is a very interesting package. We've been on a few systems, and they seem pretty capable and do offer multiline performance from a single PC.

Jack Rickard

Dear Jack,

Just a few things on my mind. Firstly, I'm the sysop of a commercially sold BBS type that you've probably never mentioned (knowingly) in your magazine. Its called BBS Express Professional, and its sold by a Salt Lake City, Utah company known as K-products. Now before you wonder about why you've never mentioned this one, there's a good enough reason. It won't run on anything thats sold as a computer in todays market. It runs on a 1.79 mhz Atari 8-bit (6502-based) cpu. Why would anyone run a BBS on something this old?

Simple, if you want a used 800xl, or 130xe model Atari, they are plentiful and sell used for around \$35-50. I consider the computer to be "disposable" for the most part, and it's incredibly easy to not care about even making one a dedicated "run it into the ground" 24 hour BBS machine. If I were to purchase a newer computer for the job, the costs are a lot higher.

Now the subject of Bargain basement BBS's certainly should be mentioned in a future boardwatch issue. The way the magazine reads, it's more or less aimed at people spending for high end computers and laying out quite a bit for multilined versions of programs. Im here to tell you that my venerable atari and its software package has the capability of turning even "cheap-skates" into sysops of a fairly powerful little BBS program. Ive got networking, online arcing, about 51 megs of storage, online games, ansi support, and many more features that are common to existing IBM or Atari ST packages. Before you shake your head in disbelief, there *IS* a multiline package for this board (yes on an atari 8 bit computer!), that will support up to 8 lines... Awhile ago, I saw a BBS list in your magazine that had Chicago-area boards and you actually listed some BBS Express PRO! boards, as BPRO... Just letting you know we are here and what those BPRO's are.

Secondly, Im just making a short comment about taxing BBS's. When you wrote about the Mass. State Dept of Revenue going after Channel one BBS, I can easily see that this is WRONG!. I have to agree with you that the state is fair if it wants to use the fees charged by BBS's as taxable income, but to go back and charge Channel One for past

offenses, when all other boards around me (other than my own) charge, is a blatantly biased way of thinking. If they go after Channel one for this crime, then they have to go after all of the boards that have subscriptions in this state as well. It seems like they are trying to knock down the largest tree in the forest, and then go after the little guys once they win their suit for the back taxes. It would certainly make the most sense to make it known that BBS operators who charge money (from a certain day onward) as an online information service SHOULD pay taxes. To bring this up now is ludicrous. In this state, things are sales taxed at 5%, but things that are considered "necessity" items, like clothing, and groceries are NOT taxed (unless you buy a mink coat). Id have to say that I personally consider INFORMATION exchange to be non-taxable, or at least it should be. A newspaper isnt taxable here, so why should calling the Middlesex news BBS (which charges for extra accesses) be taxed?

The thing might be that if all we did was leave messages and read newspapers that they wouldnt have much of a case against us. It's the file exchanging that's causing this tax trouble. If I charge for access and include files under that access, they are paying for the right to get software from me. I could be loosley construed as a software salesman. Would they force me to become a corporate entity because of this? I'm wondering if this law might end up ruining the BBS's up here as we know them. If I were to take donations as a sysop and cap them off at the costs it takes me to operate my board (and break-even), would I still have to report this as income?

I think I would. I guess this means I've been a serious fan of your column and its focus on legal issues facing boards today. Keep up the good work. As a fan of free-boards, I have to suggest that those who want to avoid this whole tax mess, might just decide to not charge in the first place, and for those huge 60 line jobs that run as a veritable business, they deserve to take the hit.

-Craig Rothman
Sysop of the Underdog BBS
(508) 788-0643
craigr@MIT.EDU

Craig:

There is a point of view, that does have some basis, that taxation of newspapers and publications would represent some infringement of free speech. Television and radio are generally untaxed. No one would be happier than I to see that interpretation extended to electronic bulletin boards and online services. But as you point out, online services go beyond the mere publication and broadcast aspects of speech. The interactive capabilities make it a viable means of commerce as well. I am quite libertarian philosophically, and would love to see no visible taxation at all if it were feasible. The realities of the political environment of today lead me to believe that some taxation will probably happen. Assuming it is taken up by legitimately elected representatives, debated, and passed, in accordance with our constitution, I will take it as a lawful act of government and comply as necessary.

My problem with the Massachusetts situation, was that the action was taken entirely by mindless bureaucrats, apparently in direct contradiction to the expressed intent of the legislature, and punitively in arrears - ex post facto. In whatever unctuous tones or however cleverly interpreted by those straining with reality, that makes THEM the illegal lawbreakers, not us. This scenario of acting against the law in the name of the law seems to be a real and very disturbing trend. I would like to see some mechanism for not only stopping it, but for holding those in government service who partake in it criminally responsible.

Jack Rickard

Hi Jack.

I'd like to start off saying what a great job you and the staff at Boardwatch is doing.

I have heard a lot of talk going around about organizations trying to connect as many schools as possible to the internet. I know and you know this is impossible.

Let's say there is a high school which is interested in getting an internet connection. Where would they turn to for help. I'm currently doing a little research on getting a high school on the internet and I was wondering if you could help me out. Stuff like

addresses, phone numbers, or e-mail addresses where I could get the help I need.

David Ludwig
daveludwig@delphi.com

David:

I do not think it is impossible to connect schools to the Internet. I think it is eminently doable and worth doing. But most of the proposals I've heard somehow involve running IP into a school and setting up a UNIX system on site, at a cost of approximately a gazillion dollars, with no technical support to speak of. This sounds like blatant grantsmanship without portfolio or reason to live beyond getting a grant. Take the money and run.

The model I think you'll see work is a DOS based multiline BBS operating from the school site, with connections to the Internet, and telephone dial up connections on the other side. Students both in school, and from home, and for that matter, parents from home, will dial the school BBS to interact with teachers, other students, and each other.

The BBS will be connected to the Internet and BBS callers will be able to send and receive mail worldwide, read and respond to newsgroups, and even telnet/ftp into and out of the BBS to the library card catalog, or other services, as they need to. But a lot of the traffic will be local to the BBS and will never leave it. They are much less expensive, much easier to operate, and the teachers who are actually doing substantive telecom work with students are already using BBS technology now. Virtually nothing has been done for K-12 on the Internet other than to port a BBS education network, K12Net, to Internet news groups. But there are many resources, such as public library card catalogs, available on the Internet. Ultimately BBS software on a PC will act as the "interface" and fanout from the Internet to a local school.

Simpler cheaper faster better. Words to design by.

Jack Rickard

Hi Jack

Sorry calling you Jack but I have read quite a few of your magazines and I feel that I already know you by now.

I just finished reading the September issue of Boardwatch. This is the only magazine that I read from cover to cover and then sometimes going back and reread some articles.

I enjoy the parts on Internet very much. I have just linked to Internet in South Africa. We are not a lot of BBS's using it yet but it will grow on a steady rate. One of the problems is that most of the SysOp's want the Networks for free and are not willing to pay for access. As the rates are very low in our own currency they will just have to justify it. As my brother in law is in Texas me and him is exchanging mail via Internet to Compuserve and back. It works very well and we find that most of our mail is delivered the same day.

I am also a Fidonet Node and would like to see Fidonet get some of the Internet ideas and use them. Do away with some of their rules and regulations. But each network has its own.

I would like to see a future article in Boardwatch about how to send mail to other Networks and for other networks to send mail to Internet. It will just be interesting to see which other networks have access to Internet. It is not always clear and I don't know how it works. I find the way to connect to Compuserve in the Doc's of UUPCB. This is not always very clear.

One interesting fact for me is that in the USA schools are getting more into BBS's that I should expect. In South Africa we have a huge problem with PC's in schools. As most of the schools might have a PC or two the problem is mostly with the teachers. They don't know most of the time what a PC is if they do they don't know how to use it. On the moment my daughter is 6 years old and she have her own where I learn her to do the basic stuff. The other problem we have is that most of the children just play games and don't want to learn anything else. I would like to get some information from your readers on how they get the children involed in the PC world and the communications. Any info will help.

Just some interesting information on our banking side here in South Africa. I am working for one of the large banking organization in South Africa and we have the following product that all work via modems:

1) Connecting to the Bank and work with your PC as a dumb terminal program accessing your Bank info and doing transfers between the users own accounts and third party accounts. This system use Async communications and is an online system.

2) Accessing your Bank Info and download the Information to your PC and doing bulk tranfers between the users own accounts and third party accounts. This system is mostly offline. The system use both Asyc and Sync communications.

3) A debit order system for users who cannot afford a system with magnetic tapes. They do all there information on a PC send the info to our people who will create a tape for them and collect there debit orders. This system can also be use to distribute salaries and large group of credits for people. The debit orders as well as the credit side work on a basis of one debit multiple credits and the other way around.

I think you will find this information quite interesting. As I work direct with clients I found that more and more people are getting modems and have already got modems but they realy don't know what to do with it and how to use it. It will be a long process getting people to use them to there full in South Africa. The speed of most of them is 2400 so the people don't have fast modems.

Thanks for your time and keep up the good work with Boardwatch. I try and get a copy every month.

Cheers.

Petrus van Breda
petrus.van.breda@softex.proxima.alt.za
SysOp - SOFTEX BBS
27-11-975-9073
Kempton Park
Johannesburg, South Africa

Dear Petrus:

If you've been reading Boardwatch, you do know me. I think the problems faced in bringing telecommunications to education here are really more similar to

those you describe Johannesburg than they are different.

As to banking, I myself am a little surprised at how slow our system has been in automating. I've been pondering the necessity for some online medium of exchange beyond the current Master Card/Visa methods, and it is becoming increasingly clear that we need to have some form of online money. Our Banking Commission here in the United States ruled several months ago that it was permissible to transfer funds by checking account number over the telephone/fax. There is little in the way of a mechanism to do this in a practical sense, but we are working with a company to try to develop something workable for the online community. The issues of fraud, portability, translation to real world economics, and so forth are pretty daunting. But I think we can come up with something much simpler than we are using now, and much easier to implement. Until we get a viable medium of exchange, online commerce will not reach its full potential.

In any event, I'm pleased we are reaching Johannesburg in good order, and very pleased to receive your letter.

Warmest Regards;

Jack Rickard

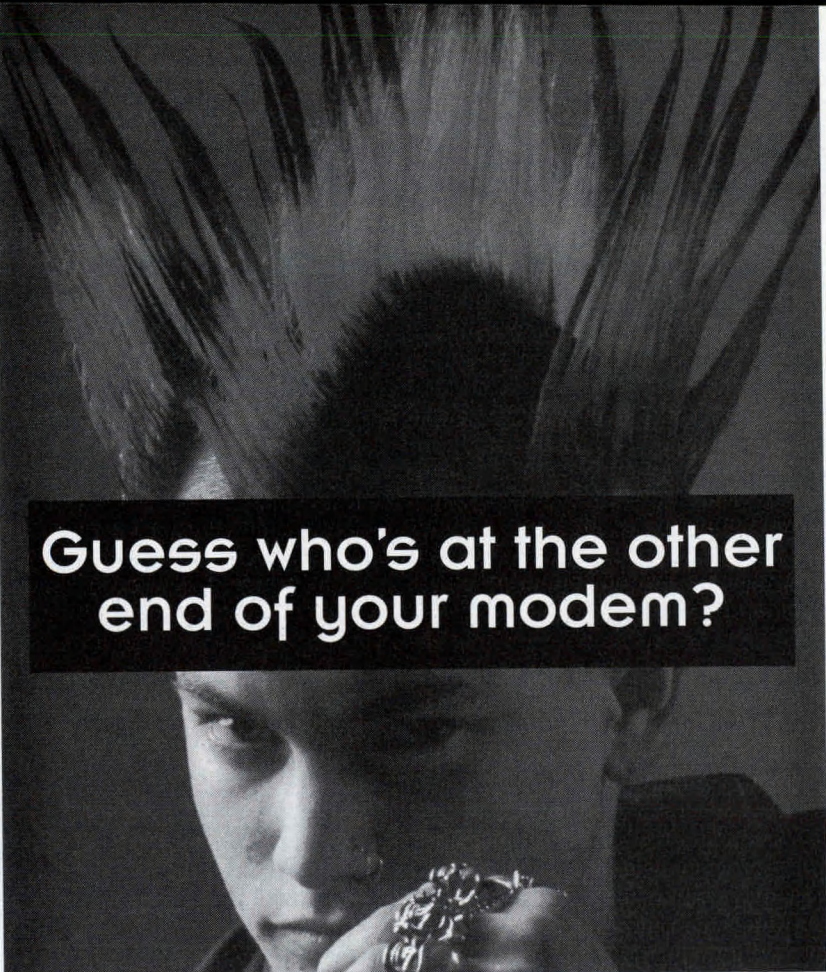
Dear Jack:

I am a relatively new sysop (8 months) of a real estate BBS in North Carolina. (YES, we have BBS's in North Carolina) :-)

I now offer Internet E-Mail addresses for my callers at no charge to help more people learn about this vast information highway. I've explained to many of them the way to send/receive messages to others on the Internet. Now that they are excited about this new means of global communication, they're eager to get started. BUT, very few of these people know ANYONE to send mail to.

If you don't mind, I'd like to remind them that they can reach their favorite BBS magazine editor (Jack Rickard) at **letters@boardwatch.com**.

Plus, many of us yearn to learn more published Internet E-Mail addresses!



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(Like the Clinton/Gore addresses you published earlier this year!) Are you aware of any lists of PUBLISHED addresses that would be of interest to my callers, and your readers???? Please print!

Jeff Tucker
The Real Estate Shop BBS
(704)531-7375
tucker@realty.vnet.net

PS - I am compiling a national list of REAL ESTATE BBS's. Any real estate sysops are welcome to call or send mail to get their BBS's included in our list. (To Be Released SOON!)

Keep up the perfect work!

Jeff:

Actually, we present a list of electronic bulletin boards operating in Charlotte North Carolina in this issue.

The Internet connection is one that many bulletin boards, large and small, will be making over the course of the next year. I predicted this nearly two years ago, to the amusement of nearly everyone in the Internet that heard it. They aren't laughing anymore, they're scrambling to provide enough links to accommodate it. Currently, they think the big wave has hit. I haven't had the heart to tell them that this is a trickle of the early adopters and experimenters. When the "wave" hits, they'll know it.

As to e-mail addresses, I've noticed no shortage of them. It is our intention to publish interesting addresses as we find them, where they offer some form of information or service to those who send them mail. I'm going to guess we will probably continue to point out resources and services available from e-mail online accounts, as the vast majority of those online have or will have them shortly.

Please keep us apprised of your progress with the Real Estate BBS list. We would be pleased to add you to our list of listkeepers when this list does become available.

Jack Rickard

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ATI Technologies	9600 ETC-E	\$499	\$275	905-764-9404	905-882-2600	905-882-2620
Cardinal Technologies	9600V42 V.32	\$349	\$219	717-293-3074	717-293-3000	717-293-3104
Cardinal Technologies	14400V42 V.32bis	\$449	\$249	717-293-3074	717-293-3000	717-293-3104
Computer Peripherals	Viva 9624e V.32	\$349	\$249	805-499-9646	805-499-5751	805-498-8306
Digicom Systems	ScoutPlus V.32/Fax	\$289	\$168	408-262-1412	408-262-1277	408-262-1390
Digicom Systems	MacScoutPlusV.32bis/Fax	\$299	\$178	408-262-1412	408-262-1277	408-262-1390
Digicom Systems	Connection 96+ V.32bis	\$199	\$139	408-262-1412	408-262-1277	408-262-1390
Digicom Systems	ScoutPlusTerbo V.32 Terbo/Fax	\$329	\$198	408-262-1412	408-262-1277	408-262-1390
Galaxy Networks	UFO V.32bis	\$999	\$299	No BBS	818-998-7851	818-998-1758
GVC Technologies	FM-9696/144V V.32bis	\$689	\$413	201-579-2380	201-579-3630	201-579-2702
GVC Technologies	SM-96V V.32	\$599	\$329	201-579-2380	201-579-3630	201-579-2702
Hayes Microcomputer	Optima 288 V.FC + Fax	\$579	\$288	404-446-6336	404-840-9200	404-449-0087
Hayes Microcomputer	Ultra 144 V.32bis	\$999	\$249	404-446-6336	404-840-9200	404-449-0087
Hayes Microcomputer	Optima 144+Fax	\$519	\$179	404-446-6336	404-840-9200	404-449-0087
Hayes Microcomputer	ISDN System Adapter	\$1199	\$450	404-446-6336	404-840-9200	404-449-0087
Image Communications	Twincmm 9600 V.32	\$299	\$279	No BBS	201-935-8880	201-935-6548
Intel Corporation	14.4EX V.32bis	\$549	\$269	503-645-6275	503-629-7000	503-228-9707
Intel Corporation	9600EX V.32	\$599	\$299	503-645-6275	503-629-7000	503-228-9707
Multi-Tech Systems	MT932BA V.32	\$869	\$435	612-785-9875	612-785-3500	612-785-9874
Multi-Tech Systems	MT1432BA V.32bis	\$899	\$450	612-785-9875	612-785-3500	612-785-9874
Practical Peripherals	PM14400FXSA V.32bis	\$549	\$250	805-496-4445	805-497-4774	805-374-7202
Practical Peripherals	PM14400FXMT V.32bis	\$299	\$155	805-496-4445	805-497-4774	805-374-7202
Quadralink Technologies	1496V+	\$360	\$320	416-538-9999	416-538-0101	416-538-1355
Supra Corporation	SupraFax V.32bis	\$399	\$149	503-967-2444	503-967-2400	503-967-2401
Telebit Corporation	T3000 V.32bis	\$949	\$399	408-745-3861	408-734-4333	408-734-3333
Telebit Corporation	WorldBlazer	\$1049	\$429	408-745-3861	408-734-4333	408-734-3333
Telebit Corporation	QBlazer V.32bis	\$549	\$299	408-745-3861	408-734-4333	408-734-3333
U.S. Robotics	Courier DS V.32bis/Fax	\$1295	\$449	708-982-5092	708-982-5010	708-982-0823
U.S. Robotics	Courier V.32bis/Fax	\$695	\$299	708-982-5092	708-982-5010	708-982-0823
U.S. Robotics	Courier HST V.32bis/Fax	\$995	\$349	708-982-5092	708-982-5010	708-982-0823
Ven-Tel	EC96 V.32	\$699	\$439	408-922-0988	408-436-7400	408-436-7451
ZyXEL	U-1496 +V.32bis	\$989	\$499	714-693-0762	714-693-0804	714-693-0705
ZyXEL	U-1496E+V.32bis	\$649	\$349	714-693-0762	714-693-0804	714-693-0705
ZyXEL	U-1496E V.32bis	\$469	\$249	714-693-0762	714-693-0804	714-693-0705
Zoom Telephonics	VFX V.32bis/Fax	\$229	\$119	617-423-3733	617-423-1072	617-423-9231
Zoom Telephonics	VFX V.32bis/Fax/Mac	\$249	\$130	617-423-3733	617-423-1072	617-423-9231
Zoom Telephonics	VFX V.32bis/24K/Fax	\$299	\$119	617-423-3733	617-423-1072	617-423-9231
Zoom Telephonics	VFX V.32bis/24K/Fax/Mac	\$299	\$130	617-423-3733	617-423-1072	617-423-9231

The above quoted prices are for purchase by qualified Sysops only. Public purchases are retail prices, and are not available through Boardwatch Magazine.

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RUMORS AND FACTOIDS

Sprint's long running **PC Pursuit X.25** service has apparently stopped accepting new users as of November 1. Rumor has it that with the higher modem speeds available, the 2400 bps access on PC Pursuit was losing its allure. We hear the service dropped from 4500 active accounts to 2600 in five months. The company is rumored to be re-evaluating the service with an eye toward bypassing 14.4 and going to much higher speeds - or dropping it altogether. Current PC Pursuit accounts remain active in the meantime.

CompuServe, meanwhile, apparently intends to expand 14.4 kbps service from the current ten cities to over 200 - and they optimistically look to have them online by spring. The 14.4 access has been popular.

The move to connect to the Internet is not without some stress. Internet host providers who have gone after consumer connections and BBS connections via UUCP are in many cases tottering on the edge of operability. Colorado SuperNet was virtually non-operational during the later part of October and the first weeks of November. UUCP connections dropped to as low as 60 characters per second throughput, with numerous system outages. The service actually stopped USENET news service for several weeks while trying to dig out from under a backlog of some 20,000 mail messages. The service is rumored to sport about 400 UUCP subscribers via 131 access lines. Holonet, Netcom, and UUNET have all been adding hardware trying to stay ahead of the game. Since the real bow wave of BBS and consumer access is still to come, probably in late spring, the Internet may not be quite as "super" as predicted in the role of Data SuperHighway. Rumors of congestion are even at the backbone level.

Boardwatch is apparently having some legal impact on cases reported. Copies of the magazine have apparently found their way into state offices in Massachusetts via the sales tax fiasco involving Channel 1 BBS. Terry Jonasson, the sysop in Winnipeg whose entire system was seized by police for having adult CD-ROM's online - the

Judge ordered the entire system **RETURNED** due to an improper search warrant. The police delayed nearly a day, then finally forfeited the equipment and **REARRESTED** Jonasson when he picked it up - sparking a legal imbroglio and a **FURIOUS** magistrate. Police indicated to Jonasson that he shouldn't have been so free in talking to Boardwatch. The state of New York has issued a hasty clarification of their sales tax laws - sales taxes **DO** apply to bulletin boards, but the additional 5% levy on online entertainment services now specifically does **NOT** apply to electronic bulletin boards.

HOTTEST NEW MODEM ON THE BLOCK - HAYES OPTIMA 288 V.FC + FAX

Motorola Codex caused quite a stir a little over a year ago with demonstrations of a new modem modulation technique they called V.Fast. In essence, it provided for a connection between modems in excess of 20 KB.

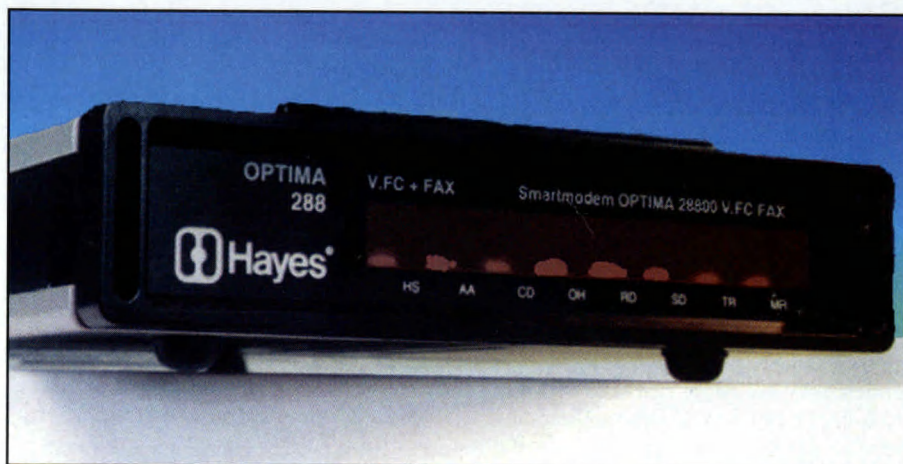
The announcement caused a bit of consternation on several fronts. Information theorists had determined that the theoretical limit of data transfer over the 3000 Hz bandwidth of our analog telephone system was a little over 20 kilobits per second (kbps). Note that at one time, they had set this limit at 600 baud, later 2400, and so on. They've proven demonstrably wrong one more time in a row as the magicians in modemland continue to seek better/faster/cheaper with an obsessive focus.

Also caught up in this is the conversion from the International Consultative Committee for Telephone and Telegraphique (CCITT) to the International Telecommunications Union (ITU). This rework of the international standards process for data communications was designed to streamline the process of adopting standards. The kindest thing we can say at this point is that it has not. Adoption of V.Fast, now referred to as ITU V.34, has been pushed out to June of 1994 and many insiders express doubt that there will **BE** a V.34 standard until sometime in 1995 at this point.

But technology has a poor history of waiting for committees. And it won't wait again. Two camps have lined up to raise the water mark on how fast you can talk online with interim solutions and promises of upgrades to V.34 later. AT&T develops modem chipsets. So does Rockwell. AT&T has come out in favor of a 19,200 bps technology that basically extends V.32bis to attain those speeds, and it has come to be called V.32 turbo. Most notable in the V.32turbo camp is U.S. Robotics.

Rockwell has lined up some 160 modem vendors behind a standard they call V.Fast Class or V.FC with the objective of 28.8 kbps connections. We think the later will be such an overwhelming winner, that it will basically strongarm the standards process into becoming V.34. We're not even sure you'll have to upgrade at all from V.FC to V.34.

The exciting news is that one more time we get a dramatic jump in modem





speed, and largely because of the fight and uncertainty over what it is, it would appear to be at less of a price premium than previous new technology modem introduction. The result will do nothing less than rewrite the online saga all over again.

Hayes Microcomputer Products, Inc. seems to be leading the revolution, and in no small way. They've made no secret of the fact that they want back on top of the data communications game, and are willing to pay the price. On November 1, they began shipping a new product titled the Hayes Optima 288 V.FC + FAX, and it didn't take but a few minutes with this little number to get comfortable in the Hayes camp. The best news is the pricing. The Optima 288 will list for \$579, a far cry from the \$1000-\$1200 we've faced with new technology introductions in past years. And they are aggressively moving to establish it in the BBS world. Eight of the largest bulletin boards, three Fidonet hubs, and three BBS software vendors participated in the beta test phase of development already. And Hayes is introducing the modems with a BBS sysop discount price to \$288 per modem. They are also offering to upgrade the older Optima's and Ultra's for \$199.

"We were pleased to have the opportunity to support Hayes in this testing. These 28.8 kbit/s modems are reliable products and users will cer-

tainly benefit from the speed," said George Peace, North American FidoNet Mail Zone Hub. "We can now perform mail exchanges twice as fast."

The new modems offer a couple of surprises. First, they really will do a 28.8 kbps connect on good telephone lines. They won't do it every time, and we have to believe this new technology takes advantage of the fact that many telephone lines exceed the basic 3000 Hz bandwidth spec pretty broadly. The modems fall back to 26,600 cps, 24,000 cps, 21,600 cps, 19,200 cps, and on down into the more common speeds. On local calls, we got several at 21.6 and 24.0 and a couple at the optimum 28.8. And, we found the Hayes Optima 288 quite smooth at falling back to lower speeds, and particularly adroit at climbing back up to 28.8 if the line conditions improved.

Most modem manufacturers talk about data throughput when sending uncompressed text files. With V.42bis data compression, it is fairly easy to achieve data throughput of 3000 cps or so with a V.32bis modem, because of the data compression in the modems themselves. But the claims of 4:1 compression to 57 kbps using V.32bis modems is a little bit disingenuous when applied to the BBS community. Most files are already compressed and stored in .ZIP or .LZH files and they gain nothing from hardware compression. A data transfer rate of 1700-1750 cps is considered

very good with V.32bis modems. With the new Hayes Optima 288, it can be a little startling to see true file transfer rates in the 3300-3500 cps range.

But the compression factor is still there when you are simply viewing menus and transferring text files. And it could become quite important as we move to graphic interfaces. Hayes has added an S register that allows you to increase the size of the V.42bis data directory table. In theory this raises the compression factor as high as 8:1. The result is a theoretical port speed as high as 230.4 kbps - which is frankly a little hard to grasp - not only for us conceptually, but for the PC hardware and virtually all of the communications software out there. We view 230.4 kbps as an unrealistic and somewhat dubious claim. But we do understand how they got there. Basically, these modems can indeed squirt data faster than the 115 kbps port speed that is commonly the highest available. We transferred a largish (2 MB) .DBF database file at over 11,000 cps average and some peaks to 11,350 cps. This is a strong indication that it was actually our 115 kbps port speed restricting the speed of the connection - not the modem.

Hayes has addressed this by re-introducing their Enhanced Serial Port (ESP) card. This card will be available for as little as \$99 in a single port version. If you have to increase the port speed from 115 kbps to support the

modem anyway, 230.4 sounds like about the right increment. And once you've done so, I don't suppose there is much motivation to declare that fact a secret. On some test text files, it may be possible to approach that. We suspect 13000 to 15000 cps to be a more realistic high if you do actually transmit database, spreadsheet, or text files in uncompressed form.

The ESP card is basically a 16550 UART with a coprocessor and memory that extends the 16 byte data buffer in the UART to a full 1024 bytes. Whatever else it is, this card does make communications finally work under Windows. If you really want to do file transfers in the background under windows, this card is worth the price.

In fact, the Optima 288 is going to shake up a lot of software vendors who never expected online speeds to get to this point over dialup lines. When you try the Optima 288 with a port speed of 57 kbps, or 115 kbps, you may find your favorite terminal program such as Procomm Plus, Telix, or Qmodem goes into a bit of a flutter. This is essentially the speed the original AT class computer used between video and the computer itself - and there are some technical problems exceeding it with the serial communications port. We suspect that the data from menu screens was actually arriving faster than our Telix or Procomm terminal programs could display the video. Many of the BBS software vendors are going to be patching things pretty frantically to support the higher speeds, particularly in their multiline versions where a single PC supports multiple lines under DesqView or an internal multitasker. Ultimately, with 16550 UARTS most products can ultimately support the higher data rates, but we would expect a firestorm of patches and software upgrades to become available over the next year as software vendors will have to scramble to keep up with the modem hardware.

The Optima 288 V.FC + FAX also includes a V.17 Group 3 fax capability to send faxes at 14,400 bps - compatible with lower speeds as well. The new modem is of course compatible with all standard lower speed modems. And according to Hayes, they will be able to upgrade the Optima 288 to V.34 when it is finally adopted for a price they estimate at under \$100.

"We are pleased to offer the sysop community a product with the highest data and fax speeds available today from Hayes at a very aggressive price," said Hayes President Dennis C. Hayes. "V.FC's widespread availability creates a new industry pre-standard for high-speed communications. This technology not only fills the gap between V.32bis and V.34 but should enable Hayes to respond quickly when V.Fast becomes a standard."

The OPTIMA 288 V.FC +N FAX comes with Smartcom for Windows LE and Windows fax communications software. Smartcom for Windows LE includes a phone book feature to store phone numbers, "smart buttons" to automate communications, file transfer protocols, and terminal emulation.

Hayes fired up the production line on the Optima 288 during the first week of November and they are gearing up for mass production as if they think they might sell a few of these. You should be able to get one soon, if not immediately.

And therein lies a tale. Hayes is not precisely building a modem designed around a Rockwell chipset. Hayes actually was a driving participant, both materially and financially, in the research and development program that produced this chip. The V.FC chips will actually come in three different flavors. The top chip is of course the 28.8 kbps chipset. But there are also chipsets for 24.0 kbps and 19.2 kbps. All are actually pin compatible with current Rockwell V.32bis modem designs. So for most manufacturers, putting out a 28.8 kbps modem should be little harder than plugging in the chips (about \$123 in 10K quantities) into their current design.

Hayes, as part of their development participation, receives ALL of the first allotment of 28.8 kbps chips and so has a virtually monopoly on 28.8 kbps modems for a couple of months at least. Zoom, for example, is also releasing a V.FC modem, but at 24.0 kbps using the next chip in the line which is available. And at least ten other vendors are announcing V.FC class modems - most using the 24.0 and 19.2 kbps chips. We rather have to believe that the 28.8 kbps modems are the ones to have, and for the immediate future, that sounds like a Hayes Optima 288.

We did do some file transfer tests. A 445,106 byte .ZIP file made the trip in 133 seconds for a 3347 cps transfer. A 2,391,902 byte .DBF file made the trip in 216 seconds for an average 11073 cps. With our serial port locked at 115 kbps, it would appear that the restriction on the .DBF file was actually our port speed, not the modem, as the transfer continually climbed to 11.3/11.4 and then would bounce back down a bit.

If BBSs primarily exist to transfer .ZIP files, why would these uncompressed data rates be important? Graphics. Graphic interfaces such as RIP et al consist of lots of airy ASCII text. So the uncompressed data rates will have a big impact on the display of menu screens and graphics - particularly as those graphics become more complex.

I can say that it was interesting. It is fast, if that helps. There are certain perceptual speed thresholds that count. The move from 300 bps to 1200 bps caused the juices to flow. If you went from 1200 bps to 9600 bps, skipping the 2400 bps era altogether, you may have felt the same thing. This jump FEELS perceptually to be a gigantic leap. But beyond that, I'm not even certain I know what it means. Audio? Video? BBS's as television stations? We'll have to see. It probably makes the ever-about-to-be-introduced ISDN availability much less important than it was. It's a 1 MB compressed .ZIP file in less than five minutes, and a 1 MB text file in less than two minutes. You can grab a pretty detailed .GIF image of about 400 KB in less than two minutes. This does change things. If Hayes was angling to get back on top of the data communications game, and recapture the BBS community, a 28.8 kbps fax modem with a list price of \$579 and a 50% discount for BBS operators pretty much demonstrates they've learned the language. Looking back over the past 15 years and Hayes' role in the online community, we would note that Dennis Hayes has won in the modem game, and Dennis Hayes has lost in the modem game. From this Optima 288 introduction, we must assume he has decided winning is better. This modem changes things - all over again. **Hayes Microcomputer Products, Inc.**, 5835 Peachtree Corners East, Norcross, GA 30092; (404)441-1617 voice; (404)441-1238 fax; (404)446-6336 BBS.

MODEM MANIA AIRS ON TALK AMERICA RADIO

BBSing is making it into new venues. A new radio show titled **MODEM MANIA** will air for an hour live each Sunday from 2-3 PM EST on a national TALK AMERICA talk radio network. Most interesting, this one is hosted by two of our own BBS operators.

The host Michael J. Klein, sysop of DX-Online in Lynn MA 617-592-8404 and co-host Tess Heder, sysop of Channel 1 in Cambridge, MA 617-354-3230, invite you to tune in, welcome your calls, feedback, and requests for guests. Modem Mania's Internet address is modem.mania@channel1.com. The call in phone number is **1-800-717-TALK!**

OPERATORS OF THE MAJOR BBS SOFTWARE FORM ASSOCIATION

Sysops from the United States and Europe attending ONE BBSCON in Colorado Springs in August met and agreed on the name, mission statement and purposes of a non-profit organization for system operators of The Major BBS (MBBS) electronic bulletin board system produced by Galacticomm, Inc.

The **INTERNATIONAL MBBS ASSOCIATION (IMBBSA)** has been formed and incorporated in Washington, DC. Jeff Coleman of Resource Strategies BBS in Tucson, Arizona will serve as President of the new organization. Tim Brown of The Promised

Land BBS in Marshfield, Wisconsin will act as Vice President. Mary Ann Martin of Martech Software, Inc. in Lawrence, Kansas will serve as Secretary, while John O'Donnell of The Meeting House BBS in Portsmouth, Rhode Island is Treasurer.

"With IMBBSA," says President Jeff Coleman, "we now have an organization of The Major BBS sysops committed to providing members with a network for the exchange of ideas, updates on technical, marketing, and regulatory information, a forum for feedback to Third Party Developers, and opportunities for mutual support."

A monthly electronic newsletter will begin in December. A review program for third party developer products will be created. And the group is examining other tangible benefits for IMBBSA members. Annual membership dues were set at \$45 for MBBS sysops and \$60 for third party developers. To request a membership information packet and application, contact Susan McNamara, Executive Director at **(310)417-3929** or MailLink SuMac@IMB. Galacticomm has established an IMBBSA forum on their Demo Board. **International MBBS Association**, 5757 West Century Blvd., Suite 512, Los Angeles, CA 90045; **(310)417-3929** voice; **(310)417-8078** fax.

SEARCHLIGHT SOFTWARE MOVES TO CLEVELAND

Effective November 1, Searchlight Software will move its corporate headquarters from Stony Brook, New York to Cleveland Ohio. The move shifts Searchlight's offices over 500 miles west. Searchlight President Frank LaRosa explained the move.

"I was in college at Stony Brook University when I released the first shareware version of Searchlight. So naturally I set up the first office in my home. Then I decided to live in Stony Brook; I didn't want to commute. So I chose an office as close to my home as possible. When we drew up our business plan for the next five years, I knew we had to pick a location more carefully. When we did, the best choice turned out to be Cleveland."

One of the reasons turns out to be the addition of Geoff Beckman as their new Vice President of Operations.

Here is a list of Talk America radio stations as of 10-8-93.

State	Call	Freq	Coverage	State	Call	Freq	Coverage
AK	KBYR	700	Anchorage	NC	WEEB	990	Fayetteville
AL	WAVU	630	Albertville		WLAS	910	Greenville
	WTLM	1050	Alexander City		WQNX	1350	Raleigh
	WDLK	1450	Alexander City		WCRY	1460	Raleigh
	WTKI	1450	Huntsville	NJ	WBMS	1340	Wilmington
	WTNW	1230	Tuscaloosa		WIFI	1460	Philadelphia, PA
	WSPZ	1150	Tuscaloosa		WTTM	920	Trenton
AR	KFAY	1030	Fayetteville	NM	KDEF	1150	Albuquerque
	KWHN	1320	Fort Smith		KQEO	920	Albuquerque
	KEWI	690	Little Rock		KUCU	107.1	Albuquerque
	KTOD	92.7	Little Rock	NV	KDWN	720	Las Vegas
AZ	KJAA	1240	Globe		KVEG	840	Las Vegas
	KFYI	910	Phoenix	NY	WVKZ	1240	Albany
CA	KTOX	1340	Needles		WHUC	1230	Hudson
	KKAL	1280	San Luis Obispo		WVNC	96.7	Potsdam
CT	WPOP	1410	Hartford		WYSL	1030	Rochester
	WNLC	1510	New London	OH	WATJ	1560	Cleveland
FL	WBRD	1420	Bradenton		WBKC	1460	Cleveland
	WAOC	1420	Jacksonville		WZKC	1330	Youngstown
	WPDQ	690	Jacksonville	OK	KXOL	1320	Clinton
	WWAB	1330	Lakeland		KNOR	1400	Oklahoma City
	WQBQ	1410	Leesburg		WWLS	640	Oklahoma City
	WIOD	610	Miami	OR	KXTD	1530	Tulsa
	WQAM	560	Miami		KBND	1110	Bend
	WTMC	1290	Ocala	PA	KAGO	1150	Klamath Falls
	WEBY	1330	Pensacola		WTRN	1340	Altoona
	WBDN	760	Tampa		WGMR	101.1	Altoona
	WFNS	910	Tampa		WMGW	1490	Meadville
GA	WIPC	1280	Winter Haven		WCHE	1520	Philadelphia
	WSSA	1570	Atlanta		WROQ	1470	Sharon
	WTRP	620	La Grange	RI	WADK	1540	Newport
ID	KRCD	1490	Pocatello		WICE	550	Providence
IL	WGEN	1500	Quad Cities		WKRI	1450	West Warwick
	WTIM	1410	Taylorville	SC	WTMA	1250	Charleston
IN	WLRX	95.7	Elkhart		WDSC	800	Dillon
	WGAB	1180	Evansville		WHHR	1130	Hilton Head
	WGL	1250	Ft. Wayne		WDKD	1310	Kingstree
	WPDJ	1300	Huntington		WJZS	1150	Orangeburg
	WMDH	1550	New Castle	SD	KTOQ	1340	Rapid City
	WAMJ	1580	So. Bend	TN	WDEF	1370	Chattanooga
KS	KAYS	1400	Hays		WKRK	1340	Columbia
	WIBW	580	Topeka		WREC	600	Memphis
LA	KAOK	1400	Lake Charles		WWTN	99.7	Nashville
	KMLB	1440	Monroe	TX	KDNT	1440	Dallas
	WTIX	690	New Orleans		KTSM	1380	El Paso
	KAIN	1040	Vidalia		KGVL	1400	Greenville
MA	WDIS	1170	Boston		KSJL	760	San Antonio
	WMSX	1410	Boston		WOAI	1200	San Antonio
	WSRO	1470	Boston	UT	KISN	570	Salt Lake City
	WSSH	1510	Boston		KSGI	1450	St. George
	WHTB	1400	Fall River	VA	WTON	1240	Harrisonburg
	WBSM	1420	New Bedford		WGAT	1050	Kingsport
	WPEP	1570	Taunton	VI	WSTA	1340	St. Thomas (USVI)
	WGAU	1340	Worcester	WA	KLAY	1180	Seattle
MI	CKLW	800	Detroit		KJRB	790	Spokane
	WKZO	590	Kalamazoo	WI	WTOQ	1590	Dubuque
	WKYO	1360	Saginaw		WCWC	1600	Fond Du Lac
MN	KNSI	1450	St. Cloud		WFAW	940	Fort Atkinson
MO	KCGQ	1220	Cape Girardeau	WV	WKQY	1240	Bluefield
MT	KGHL	790	Billings		WQBE	950	Charleston

Beckman brings a much needed public relations and marketing background to the company, and he lives in Cleveland. With regards to why they felt it necessary to leave New York, Beckman responded: "To save money. Islands and peninsulas - which is all this area has - are bad spots for businesses. Land is in short supply, so you pay higher rents and more taxes. That raises the cost of living, so you have to pay higher salaries to get good people. And being on the east coast maxes out shipping costs, phone bills, and travel expenses."

Of the 20 largest metropolitan areas, Cleveland is ranked 7 in size, but has the third lowest cost of living. And the city offers technical assistance and low-interest loans to companies that relocate there. And Searchlight has 21 active BBS sites in Cleveland, the largest concentration in the U.S.

The new contact information for Searchlight is **Searchlight Software**, 6516 Detroit Ave., Cleveland, OH 44102; (216)631-9290 voice; (216)631-9289 fax; (216)631-9285 BBS; 800-780-LITE for orders.

ONE BBSCON FOR 1994 ANNOUNCED

Plans for the **Online Networking Exposition and BBS Convention 1994** have been finalized. The ONE BBSCON will be held August 17-21, 1994 at the Inforum in Atlanta Georgia. ONE BBSCON has historically been held in Colorado. The move to the east coast combined with more flexible accommodations in Atlanta points to a gathering of BBS operators and PC communications aficionados in the 3500-5000 attendee range.

The main focus of activities will be held at the Inforum, a high tech convention center located in downtown Atlanta in the Atlanta Market Center facility. The primary hotel is the Marriott hotel downtown, and many of the evening activities and hospitality suites will be active at this site. Hotel accommodations in the city range from \$35 to \$110 per night and there are numerous hotels within easy walking distance of the Marriott and the Inforum. A modern train system (MARTA) links the airport to the downtown area for convenient transportation from the airport to the con-

vention at \$1.25. Atlanta is an east-coast air transportation hub offering substantial summer discount air fares into and out of the city. Over 20 million people live within driving distance of Atlanta.

Registration pricing for the convention has been set at the same price as the 1993 event.

Registration received prior to May 1, 1994 - \$175

Registration received from May 1 to August 1 - \$250

Registration received After August 1 - \$325

Space for some 400 vendor displays will be available at the Inforum's vendor exhibit area.

ONE BBSCON traditionally names an Executive Advisory Board each year to provide input and guidance on educational sessions and issues regarding the convention in an effort to represent the widest possible variety of online activity representation.

1994 ONE BBSCON Executive Advisory Board

Dennis C. Hayes,
President, Hayes Microcomputer
Products, Inc.

Michael Greenbaum,
General Manager, Communications,
Prodigy Services Company.

John C. Dvorak,
Columnist, PC Magazine

Jim Harrer,
President, Mustang Software, Inc.

Scott Brinker,
President, Galacticom, Inc.

Jim C. Warren,
MicroTimes and Autodesk, Inc.

Stan Hirschman,
Vice President Store Operations,
Software Etc.

Dave Hughes Sr.,
President, Old Colorado City
Communications

Lance Rose,
Author of SYSLAW.

Dennis C. Hayes will be the keynote speaker at the opening session of the ONE BBSCON.

ONE BBSCON is beyond all else, an educational event. Some 137 educational sessions were presented in three days

during the 1993 event providing an invaluable opportunity to learn the nuts, bolts, and issues in online services and electronic bulletin boards. Additionally, ONE BBSCON hosts numerous industry meetings, organizational forums and technical standards discussions. Proposals/abstracts for educational session presentations or organizational meetings may be submitted, in writing, prior to April 1, 1994 to **ONE BBSCON CALL FOR PAPERS**, Boardwatch Magazine, 8500 West Bowles Ave., Suite 210, Littleton, CO 80123.

For additional information on vendor space or attendee registration, contact Peg Coniglio, **ONE, Inc.**, 4255 South Buckley Road, Suite 308, Aurora, CO 80013; (303)693-5253 voice; (303)693-5518 fax; (303)693-5432 BBS.

CELLULAR DATA LINK CONNECTS LAPTOPS TO POCKET PHONES

ORA Electronics has introduced an intelligent cellular/data link package that connects a modem or fax-equipped laptop to a portable cellular telephone. The Cellular/Data Link provides a connection to portable pocket phones from AT&T, Diamond-Tel, Mitsubishi, Motorola, NEC, or OKI and simulates the dial tone and provides the RJ-11 connection needed by standard modems and fax machines. The unit is powered by a standard 9-volt battery. The unit is priced nominally at \$249, but the price varies depending on the specific phone unit you need to connect to. **ORA Electronics**, 9410 Owensmouth Ave., PO Box 4029, Chatsworth, CA 91313; (818)772-2700 voice; (818)718-8626 fax.

HAYES ESP GIVES CPR TO WINDOWS COMMUNICATIONS

by Alan D. Bryant

Hayes recently rolled out **Version 2.0** of its **ESP** serial port card in a bit of a repositioning of the product. Now billed as a communications accelerator card for Microsoft Windows, Hayes is riding on the shir-tails of Windows-specific video accelerator cards which have met with a fair degree of success in the marketplace. But in much more than a simple marketing move, Hayes is set to take advantage of the fact the high speed data communications under Windows



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Hayes' ESP Communications Accelerator Card

is more than a bit of a laughable proposition (read "impossible").

As an avid Windows user (not something I usually admit in public - picture me under a spotlight, identified only as "Alan B." like the Frosted Flakes commercials), I'm accustomed to suffering through online with abysmal transfer performance and high error rates. Downloading files while doing nothing more than playing an audio CD on the CD-ROM drive wreaks havoc, to mention nothing of writing a book chapter or magazine article at the same time. Forget opening a DOS window - you'll likely abort the connection itself.

ESP to the rescue. After installing the card and running a simple Windows-based setup utility, I connected my Hayes Optima 144 to it. Card installation couldn't have been easier, and I didn't have to disable either of my existing com ports. I dutifully loaded Procomm Plus for Windows, and selected COM3 in the setup screen (I configured my card to pretend it's COM3 when running in Windows, though it actually used base address 140 and IRQ15). I immediately dialed a favorite local BBS, and cranked up a multi-file batch download of about 10 Meg of the latest Windows shareware toys.

In the ultimate test, I filled my screen with loaded programs, had several others minimized as icons, and popped Belinda Carlisle into the CD-ROM drive just for grins. I reckoned Windows was having a grand old time

paging fake emulated memory on and off the hard disk. Yet through it all, switching programs, switching tracks on the CD, closing files and opening others, not a single error occurred during the transfer; Procomm just kept chugging files like a mad man. This is the life for a Windows-using, file-sucking modem hound like myself. And I don't think I recall a single time in living memory when Procomm for Windows had a zero in the "Corrections" field like it did the entire time I was online.

Under Windows, the ESP card operates in either UART or Enhanced mode. In UART mode, it behaves just like a conventional serial port in every way, flawlessly emulating a 16550 UART. While in UART mode, you could replace a conventional serial port by using traditional base I/O addresses and IRQ assignments. Once set to enhanced mode, however, the ESP card really shines by replacing traditional interrupt driven operation with an intelligent operating mode that offers extra performance to any native-Windows com application that supports standard Windows com drivers (which includes all the popular terminal packages available for Windows). Speeds up to 115,200 bps are supported under Windows - completely error-free at that.

The odd addressing and IRQ assignments possible in enhanced mode also means the card can co-exist easily with COM1 and COM2 ports you may already have installed. Enhanced mode

also takes advantage of the card's optional 16-bit bus interface for even greater performance improvements, as though the card's 2,048 bytes of buffering alone (1,024 in, 1,024 out) weren't enough.

DOS users are not left out of the picture. Although the card's packaging and Hayes' marketing of the product clearly positions it as a Windows solution, DOS users can benefit from the card as well. Unlike the initial version of the ESP card, the new Version 2.0 design also lets DOS users benefit without the need for special device drivers or specific support in a communications program. (This DOS incompatibility is primarily why the original ESP card gathered yawns in the marketplace; installing 16550-based traditional com ports gave nearly all the benefits of the original ESP card without the expense). Although the card behaves basically like a 16550 UART equipped regular com port under DOS, there are some rather interesting differences. First, a 16550 UART has a mere 16 bytes of internal buffering; the ESP card in 16550 emulation mode offers a whopping 1,024 bytes of buffering on the card all with complete 16550 compatibility. Second, the DOS configuration program for the board allows you to set a baud rate multiplier to crank the card to mind-boggling data rates - as high as 921,600 bps (presuming you could find a DOS com program or communications device that supports such a high data rate).

As modem speeds continue to rise, and as Windows continues to grow in popularity, it will become increasingly critical to have a solution to the communications bottleneck problem that plagues the Windows architecture. Hayes' ESP serial port card seems an ideal answer. Currently available in a single port model which lists for \$99.95, Hayes states that a dual-port version of the card is forthcoming. **Hayes Microcomputer Products, Inc.,** P.O. Box 105203, Atlanta, GA, 30348. (404)840-9200.

*Fetching Files
from*



The Internet

NETCOM EXPANDS INTERNET ACCESS

Netcom Communications Services, Inc. has provided reasonably priced Internet access in the San Francisco Bay area for several years. Gradually, they have expanded both north and south along the coastline as far as San Diego and Seattle.

In the past few months, the company has started a major nationwide expansion that will ultimately see this service available in over 40 cities by Spring.

This is good news for Internauts. Netcom's service is considered technically quite sound and very progressive. They seem to be one of the few Internet service providers both willing AND able to expand in the face of increasing demand for Internet services.

The company offers a full range of services from personal accounts to T1 connections, all at very competitive prices. A personal account allowing you to dial into their host and access the Internet starts at \$17.50 per month. A low volume UUCP account with USENET news is \$25 per month. A full UUCP account with USENET news feed AND a dial-in host account is priced at \$60 per month for unlimited traffic - no per hour charges at all.

The pricing gets more attractive as you walk up the bandwidth ladder. A 14.4kbps SLIP or PPP account is \$160 per month with a \$750 setup charge. A 56 kbps port is only \$400 per month plus \$1200 setup (plus your leased line to a netcom point of presence). And a full T1 link is \$1000 monthly.

CURRENT NETCOM POP'S

206-547-5992	Seattle, WA
214-753-0044	Dallas, TX
310-842-8835	Los Angeles, CA
303-758-0101	Denver, CO
404-303-9765	Atlanta, GA
408-241-9760	San Jose, CA
408-459-9851	Santa Cruz, CA
415-328-9940	Palo Alto, CA
415-985-5650	San Francisco, CA
503-626-6833	Portland, OR
510-426-6610	Pleasanton, CA
510-865-9004	Alameda, CA
617-237-8600	Boston, MA
619-234-0524	San Diego, CA
703-255-5951	Washington, DC
714-708-3800	Irvine, CA
818-585-3400	Pasadena, CA
916-965-1371	Sacramento, CA

They have plans to add St. Louis, New York, and Chicago before the end of November and reach 40 cities within just a few months. This lunge inland could be good news for Internauts who currently face few and pricey options for Internet connections. We can tell you their new Denver host (NETCOM7) is pretty snappy at this point on the performance end. They use SunOS UNIX systems exclusively. **NETCOM - On-line Communication Services, Inc.**, 4000 Moorpark Ave., Suite 209, San Jose, CA 95117; (800)501-8649 voice; (408)554-8649 International; (408)241-9145 fax; Internet: info@netcom.com

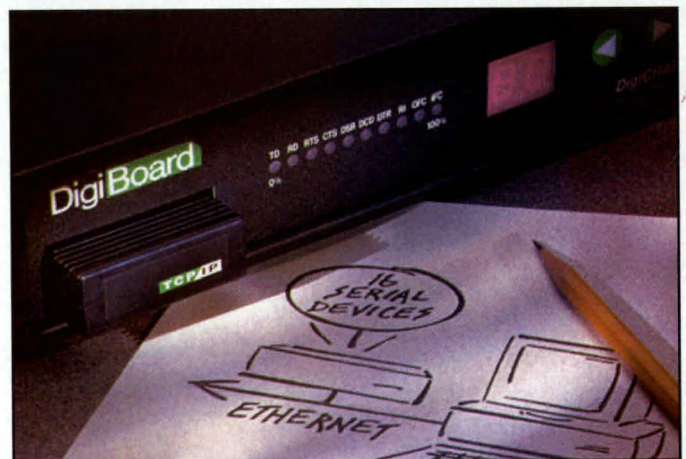
DIGIBOARD NC/CON-16 - SERIAL ACCESS ON TCP/IP NETWORKS

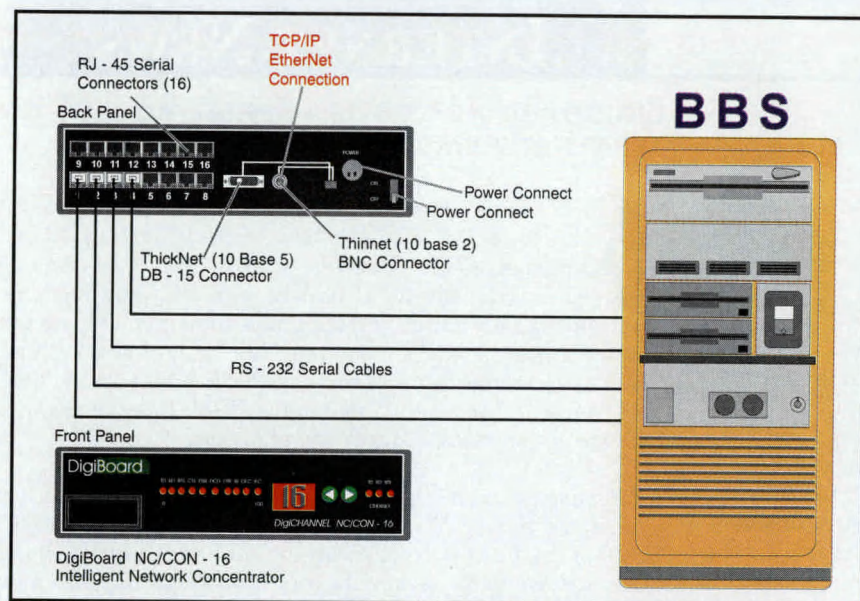
An amazing amount of energy is currently in focus on the problem of connecting bulletin boards to the Internet. This is driven from several directions at once. The vast majority of callers with PCs and modems don't have access to the Internet, and the few public access providers offer a UNIX command line somewhat less than enticing to many. But mentions of the Internet in the general media are increasing, and many BBS's face a continual barrage of questions about Internet access.

Perhaps even more powerful is the push from the other side of the fence. Many companies and government agencies feel the push to "put up an ftp site" or otherwise make their information, products, etc. available on this new National Data Superhighway everyone is talking about. When they learn the expense and tribulation of setting up a UNIX system on IP, the costs and complexity can be a little daunting. Ultimately PC-based BBS technology can offer a presence on the Internet at a tiny fraction of the cost, and while not technology free, it is generally in a more familiar environment.

But the tools to connect bulletin boards to the Internet in full IP fashion are still under development. Some can't wait, and we are seeing a fairly impressive number of bulletin board services appearing on the Internet despite the lack of solutions. One of the ways they do this revolves around a bit of hardware plumbing. By using a device termed a terminal server, they can convert an ethernet based TCP/IP stream into asynchronous serial port communications that are much easier to connect to existing PC-based BBS software solutions.

DigiBoard, of Eden Prairie Minnesota, is a company already familiar to the BBS community. Early on, they developed a hardware device that allowed people to exceed the standard two port configuration available for serial devices on the standard IBM PC. Their main line of business is still providing multiport serial cards in 4-port, 8-port, 16-port, and even larger configurations. Many multi-line BBS software products use DigiBoards to connect large numbers of modems to a single PC.





that callers to the BBS can telnet OUT and those on the Internet can telnet IN to the BBS itself.

The NC/CON-16 is actually capable of supporting up to 9 TCP/IP "sessions" per port. So a BBS caller could take one of the lines, and logon to several different telnet sites and switch between them using CTRL-] and a session number. There is also online "help" and entering a ? character calls up the help screen.

The device has several "autoconnect" options. You can configure it so that any time a particular user logs into the system via one of the serial ports, they are automatically connected to a specific remote telnet site. You can also set it up to where anytime ANYONE logs into a specific serial port, that user is automatically connected to some specified telnet site. Without autoconnect, the user simply is connected to the system prompt, where they can enter their own telnet or login commands.

Overall, the NC/CON-16 is remarkably compact, does an excellent job of making the connections, and partially solves the "how to connect a BBS to the Internet" question. It does not make any provisions for ftp, electronic mail, or USENET News Groups. But it does allow you to put a BBS on the Internet that Internauts can telnet into, and it can conceivably be used to allow your BBS callers to telnet OUT to other Internet services. The list price of the device is \$2195. **DigiBoard**, 6400 Flying Cloud Drive, Eden Prairie, MN 55344; (612)943-9020 voice; (612)943-0812 BBS; (612)943-5398 fax.

FINDING FILES BY MAIL ON THE INTERNET - THE SHORT COURSE

by Jack Rickard

Electronic bulletin board aficionados live in a world of files. When browsing files to find the latest, newest, or just something interesting, the Internet itself can't add or subtract much from the immense pool available on direct dial bulletin boards. For one thing, the BBS community is way out in front on the cataloging, listing, presentation, and description of shareware programs.

That said, the internet File Transfer Protocol (ftp) program is one of the

The company recently announced a new addition to their product line, and a very interesting one actually. Termed the DigiBoard NC/CON-16 Intelligent Network Concentrator, this device connects to a TCP/IP ethernet network via a single port, and provides 16 asynchronous serial ports out the other side supporting data rates up to 38.4 kbps or up to eight ports at 57.6 kbps. Essentially, it is a pretty smart terminal server. And it can be used to do a hardware splice of currently available BBS systems to the TCP/IP internet.

The hardware connections are pretty simple. On the rear panel of the unit, there are two connectors: a standard BNC connector for thin-ethernet (10base2) and a DB-15 connector for thick ethernet (10base5). The NC/CON-16 will work with either to connect to TCP/IP.

The serial port connections are also quite cunning. They are actually RJ-45 telephone connector receptacles. You have to either make your own serial cables with an RJ-45 modular plug on the end, or buy them from DigiBoard. They are pretty proud of theirs, and it takes a special crimping tool to do your own. But they are extremely easy to connect or disconnect, and it allows the chassis of the unit to be extremely compact - not much larger than a modem actually - while supporting 16 serial connections.

The TCP/IP software comes on a small, squarish plug in module called a DigiPak protocol cartridge that plugs into the front of the unit. This allows

upgrades very easily, and opens the door to other protocols. While not yet available, DigiBoard plans a Novell IPX version - same box, different protocol cartridge.

Internally, the system features a 16 MHz 80186 processor and a National 8390 16-bit network interface controller with 256 KB of RAM and another 256 KB of EPROM. Sixteen 16C550 UART's provide asynchronous serial port interface.

The unit is quite configurable. Basically, you connect a PC or terminal to one of the serial ports, and logon as root with a password of ncon. You can then configure ports, set up how the system operates, login strings, and so forth.

The front panel allows you to select any one of the 16 serial ports to monitor activity on all RS-232 lines via LEDs - much like a modem front panel.

The ports can be figured as a serial printer port, a modem-in port, a modem-out port, or a modem in and out port quite flexibly with full hardware or software handshaking. In this way, you could use this device with modems connected to telephone lines so that people could call IN to this modem bank to get access to your TCP/IP network. Or you can configure them so that people on the TCP/IP network can telnet to one of these ports and use the modem to dial OUT. But most bulletin boards configure it in/out, and connect them to the BBS serial ports with a null modem cable so

main uses of the Internet, and the bulk of network backbone traffic involves the transfer of these files. Often, you will read in a USENET newsgroup, a mailing list, or by e-mail of a specific file available from a specific site. Usually, they provide three pieces of information:

1. The site.
2. The directory
3. The file name.

With these three bits of information, you can locate and download a specific file by ftp. You simply enter **ftp sitename.org.whatever**. You get a login prompt and normally enter **ANONYMOUS** as the login, and your own e-mail address as the password. You then enter the **cd** command to change to the directory (**cd /pub/somedir/thathas/somefil**). And finally you enter **GET FILENAME.UNIX.FILES.CAN.BE.A LITTLE.LENGTHY.and.CaSe.SenSiTive**. This transfers the file to your host. From most UNIX hosts, you then download the file using the zmodem protocol by entering **SZ FILENAME.EXT**. The file is transferred from the host, through the modems, to your local hard drive.

And this can be a very valuable thing to be able to do. Rather than list every Internet provider in the world in an e-mail message, a correspondent would be more likely to note its existence, and provide this pointer to the larger file. Files containing Frequently Asked Questions (FAQ) are quite commonly referred to in response to common questions in newsgroups. In this way, files are maintained that anyone can ftp to learn the basics. Similarly information files, electronic text articles, programs, and more are maintained in "archives" and it is quite common to refer someone to one of these files for more information, software, or lists of most anything.

The other common scenario is when you need to locate a file and have no idea where it is. If you have the filename, or even part of the filename, you can use a program titled ARCHIE to locate it. On most any host, you can enter ARCHIE FILENAME. After a few seconds delay, the program will print a list of sites, directories, and filenames where you can ftp the particular file you are looking for. ARCHIE is actually a worldwide coordinated data-

base of what files are available where. It lists over a million files on thousands of sites.

In this way, you can locate files, and obtain them. But it all assumes that you have access to a full Internet host. Internet dialup accounts typically run \$15 to \$25 per month. And realistically, for many of us, after the first blush of enthusiasm for the Internet and a few weeks of "exploring", the bulk of what we really want to do is e-mail, mailing lists, and newsgroups. There is a growing number of users who have saved quite a bit of money by using commercial services and bulletin boards for these services only.

And actually, there is quite a bit you can do from an e-mail only account.

LOCATING FILES

ARCHIE is actually quite usable by electronic mail, just slower. You can send e-mail to an ARCHIE server, and receive the results back by electronic mail. The following addresses are ARCHIE e-mail server sites.

Australia	archie.au
Canada	archie.mcgill.ca
England	archie.doc.ic.ac.uk
Finland	archie.funet.fi
Germany	archie.th-darmstadt.de
Israel	archie.cs.huji.ac.il
Japan	archie.wide.ad.jp
New Zealand	archie.nx
Taiwan	archie.ncu.edu.tw
United States	archie.rutgers.edu
United States	archie.sura.net
United States	archie.unl.edu
United States	archie.ans.net

To use an ARCHIE e-mail server, address your message to **ARCHIE @SITE.COM**. For example e-mail **archie@archie.rutgers.edu**. Leave the SUBJECT blank. In the body of the message on the first line, starting with the first character, enter the command:

prog filename.ext
quit

The server will respond by e-mail with a list of sites and directories where you can find that file.

There are a few other interesting commands.

servers - returns a list of all known archie servers.

site <site address> - returns a list of all files on a particular site.

help - responds with a document describing how to use the server.

path - allows you to specify a different address for the server to send the reply.

RETRIEVING FILES BY ELECTRONIC MAIL

Once you have located a file, you can actually retrieve it by electronic mail as well - although this gets a little more complicated.

There are currently four general ftpmail servers available that will let you retrieve a file from most any site, and will send it to you in electronic mail form.

These sites run a program titled FTPMAIL written by Paul Vixie at the Digital Western Research Laboratory (**decwrl.dec.com**) that will generally go ftp a file from any site, get the file, and mail it to you.

United States ftpmail@decwrl.dec.com England ftpmail@src.doc.ic.ac.uk Australia ftpmail@cs.uow.edu.au France ftpmail@grasp1.univ-lyon1.fr
--

If the file you are looking for is a binary file instead of a text file, you will want to instruct the server to send the file to you in UUENCODED format. This is a process where the server converts the data into printable ascii text. It makes them about a third larger, but assures that they can be transported by e-mail. You will have to use the UUENCODE utility to reassemble the message into the original binary file.

reply jack.rickard@boardwatch.com
connect time_a.timefreq.bldrdoc.gov
binary
uuencode
chunksize 50000
chdir /pub/acts
get pctime.exe
quit

SOME ADDITIONAL MAIL SERVERS

alt-sources-serv@dmc.com
 archive-server@ames.arc.nasa.gov
 archive-server@athena-dist.mit.edu
 archive-server@bcm.tmc.edu
 archive-server@cc.purdue.edu
 archive-server@chsun1.uchicago.edu
 archive-server@dsi.com
 archive-server@eclectic.com
 archive-server@germany.eu.net
 archive-server@ics.uci.edu
 archive-server@joshua.atherton.com
 archive-server@ncsa.uiuc.edu
 archive-server@rice.edu
 archive-server@st.cs.uiuc.edu
 archive-server@sun.soe.clarkson.edu
 archive-server@wdl1.wdl.loral.com
 comp-binaries-mac-serv@dmc.com
 comp-sources-misc-serv@dmc.com
 comp-sources-reviewed-serv@dmc.com
 comp-sources-unix-serv@dmc.com
 comp-sources-x-serv@dmc.com
 cubelib@gmuvax2.gmu.edu
 doc-server@prl.dec.com
 fileserv@dmc.com
 fileserv@shsu.bitnet
 ftp@opcom.canada.sun.com
 ftp-mailer@ftp.informatik.tu-muenchen.de
 gene-server@bchs.uh.edu
 goodies-lib@cs.man.ac.uk
 graf-bib-server@decwrl.dec.com
 info-server@doc.ic.ac.uk
 info-server@Germany.EU.net
 info-server@hp4nl.nluug.nl
 info-server@sh.cs.net
 librarian@cse.ucsc.edu
 library@cme.nist.gov
 lido@cs.uni-sb.de
 listserv@orion.bitnet
 listserv@ubvm.bitnet
 listserv@ubvm.cc.buffalo.edu
 listserv@vm1.nodak.edu
 mail-server@cs.ruu.nl
 mail-server@nluug.nl
 mail-server@rusmv1.rus.uni-st
 netlib@draci.cs.uow.edu.au
 netlib@methvax.cs.miami.edu
 netlib@nac.no
 netlib@ornl.gov
 netlib@peregrine.com
 netlib@uunet.uu.net
 netlib@ukc.ac.uk
 next-archive@cc.purdue.edu
 nistlib@cmr.ncsl.nist.gov
 nptserver@cme.nist.gov
 object-archive-server@decwrl
 ps-file-server@adobe.COM
 reduce-netlib@rand.org
 reports@midgard.ucsc.edu
 request@legato.com
 search@genbank.bio.net
 service@nic.ddn.mil
 source@ureview.com
 statlib@lib.stat.cmu.edu
 tech-reports@cs.columbia.edu
 telecom-archive-request@letni
 vax-pro@wkuvx1.bitnet
 vmsnet-sources-serv@dmc.com
 wrl-techreports@decwrl.dec.co
 wscott@ecn.purdue.edu
 xstuff@expo.lcs.mit.edu

If you send this message to **ftp-mail@decwrl.dec.com** you will receive the **PCTIME.EXE** file back by electronic mail. The response may take from a

To use these sites, you basically make up a little batch file of what you want it to do, and mail it to the ftpmail site in the message body. The basic form is as follows:

```
connect pit-manager.mit.edu      ;ftp logon to the systemPIT-MANGER.MIT.EDU
chdir pub/usenet/news.answers    ;change directories
get finding-sources               ;Get the file finding-sources
quit                              ;End of the process
```

Note that you don't want to include the above comments - just the commands.

few hours to several days, depending on traffic at decwrl. The file will come back in UUENCODED ASCII text form, and you will have to run UUDECOD on it to get the **PCTIME.EXE** executable.

The first statement of the above procedure is the **REPLY** statement. This can be used to specify the address you wish to have the file sent to. It isn't actually necessary. Without it, the system will send the file to the return address on your message. But the **REPLY** statement can be used to override your return address, and does offer some additional insurance that the file is mailed back to the correct address.

The **CONNECT** statement instructs the system to ftp to **time_a.timefreq.bldrdoc.gov**. The **BINARY** statement sets the ftp mode to pass binary files. **UUENCODE** tells it to encode the file as ASCII text for transmission. **CHUNKSIZE** tells it to break the file into 50 kb messages. **CHDIR** specifies the directory the file is stored in. **GET PCTIME.EXE** specifies which file to send. **QUIT** terminates the batch procedure.

Note that files are limited to 100 KB in size, and that some intermediary sites may further limit file size. Your host, such as CompuServe, may typically limit message sizes to 50 KB. You can actually specify the maximum message size with the statement **CHUNKSIZE nnnnnn** where **nnnnn** is the value in bytes. The ftpmail server will break the file into a series of messages. You will normally have to piece them back together with a text editor before UUDECODING.

There are numerous other mail servers available. Unlike the FTP-MAIL servers, they tend to be specialized on particular topics or functions and operation may vary from server to

server. In general, to find out how to use a particular server, simply send an e-mail message with the word **HELP** as the message body. This will usually result in an electronic mail response with documentation on how to use that particular server, and what is offered.

If it does not absolutely positively have to be there right now, you can generally locate and retrieve most any file on the Internet from a simple e-mail box with an domain name address.

FINDING SOMEONE ON THE INTERNET - THE USENET ADDRESS SERVER

by Jack Rickard

A question that comes up a bit frequently revolves around the "How do I find Joe Blow's Internet address?" theme. Unfortunately, there is no comprehensive "directory" of Internet addresses here on Terra Firma. AT&T and General Atomic are working on a "Directory of Directories" that is currently in operation as the **Internet Network Information Center** or **INTERNIC**, but it appears at this point to be a work in progress. We've covered several WHOIS databases in past issues, and we'll continue to cover this very intriguing area as it develops.

But a big part of Internet traffic is of course the Usenet News Groups. Millions of people all over the planet now participate in discussions strewn across some 5000 topical conferences ranging from **alt.sex.aluminum.baseball.bat** to **alt.cooking**. Usenet is not properly a "network" in a hardware sense and it's tie to the Internet is more that the Internet is the most common distribution medium for Usenet. Usenet itself is more like a publication. Anyone can address a message or "reply" to a Usenet topic and then it is published or promulgated to everyone receiving that Usenet group. Usenet news groups are

received at some 76,000 sites worldwide and about 2.5 million people participate in Usenet. About 70 MB of data pass over the Internet each day just in Usenet traffic representing some 29,000 new messages daily.

The main repository of Usenet archives is a machine titled **rtfm.mit.edu** at the Massachusetts Institute of Technology administered by Jonathan Kamens. Kamens has developed a very interesting white pages address directory termed the Usenet Address Server. Software on the system actually scans each Usenet article looking for the FROM header line in the message and adds all new names found to the database.

You can search this database by electronic mail. Send a message to **mail-server@rtfm.mit.edu**. Leave the SUBJECT line blank. In the body of the letter, enter **send usenet-address/name** where **name** contains a portion of the name of the person you are looking for. The program will search the database and send back all lines containing the search pattern you put in **NAME**. You can include more than one search line per message (up to 20 total):

send usenet-address/rickard
send usenet-address/jack
send usenet-address/glastetter

The system will e-mail you a list of ALL entries containing your name search pattern, so if you are looking for a Smith or Johnson, you will probably receive a lengthy message and still have a bit of selection to do. You do not receive any particular directory information such as street mail address, fax number, organization, etc. It is strictly the e-mail addresses picked off of the **FROM** field in the message headers. However, it does provide you information on the date the address was picked up, and we found it remarkably useful actually.

IF WISHES WERE TREES, FAX-ING WOULD BE FREE

by Kevin M. Savetz

Internet users are tinkers by nature. The 'net wouldn't be possible without thousands of ingenious hackers around the world, tinkering away to blend a copious hodgepodge of computers, people and appliances. These great minds have brought us

such fine artistry as the Internet Toaster, a variety of 'net-linked vending machines, even dial-a-Bible-verse. Many of these tools are useless and many are fun, and occasionally someone tries doing something useful.

In the "something useful" category, a creative group of people have plugged their fax machines into the Internet for "an experiment in remote printing." The experiment is a good hack, allowing Internet users to send faxes via electronic mail. It works simply enough - send electronic mail to a special address, and soon after (if your recipient's fax machine is in a covered area) out comes a freshly-minted fax. This service is free - it doesn't cost the sender a penny to send a fax. The recipient is only out the cost of a sheet or two of fax paper.

The experiment is the brainchild of Carl Malamud (the creator of Internet Talk Radio) and Arlington Hewes. They're doing research on how to integrate special-purpose devices (like facsimile printers) into the fabric of the Internet. The service is currently free, but the creators are investigating ways to help the organizations recoup the cost for sending faxes.

HOW DOES IT WORK?

A variety of companies, institutions and citizens linked to the Internet have joined the experiment by linking a computer and fax modem to the 'net. When an organization joins the remote-fax service, they specify what areas they are willing to send faxes to. In most cases, an organization will allow faxes to be sent to any machine that is a local call from their fax server.

When you send an e-mail fax message, you (naturally) must include the phone number of the recipient's fax machine. A computer looks at the phone number and decides if any participating fax machines cover the area you want to fax to. If so, your message is routed to the appropriate machine for faxation. Otherwise, you will receive electronic mail with the disappointing news that your fax couldn't be delivered.

WHO'S FAXABLE?

Can you send a fax anywhere? Well, no. The experiment only began in July, so only a smattering of par-

ticipants have enlisted their fax machines in the quest to send outgoing messages from total strangers to other total strangers. As of early November, you can send faxes to all of Australia, Washington, DC, big chunks of Central California, some of Southern California, and parts of Michigan, Massachusetts, and New York. (See sidebar for complete coverage information.)

More locales will be faxable soon, including more parts of the United States, Denmark, Finland, Ireland, Japan and Sweden.

SENDING A FAX

To send a fax over the Internet, compose an e-mail message. The body of the message should contain the contents of your fax message. The TO: line is the most important part of your e-mail, because it must contain the phone number of the recipient's fax machine as well as the recipient's name.

The TO: line should look something like this:

**TO:remote-printer.Arlington_Hewes/
Room_403@0.1.5.2.8.6.9.5.1.4.1.tpc.int**

To the left of the @ symbol, you must include the identity of the recipient. The words "remote-printer" tell the fax server the type of access. (In this case, faxing or remote printing.) Because some mailers have difficulty dealing with addresses that contain spaces, you should be very careful as to what characters you use to identify the recipient. It's safest to use upper and lower case letters, digits, the _ and the / character. When the fax cover sheet is generated, the _ will turn into a space and the / will become a line break. So, the above address would generate a cover sheet like:

Please deliver this facsimile to:
Arlington Hewes
Room 403

The mess of numbers to the right of the above example identifies the telephone number of the remote fax machine. Exchanges must be specified by country code and phone number. This means you must specify the country code then the phone number of your victim. If you're sending to a machine in the U.S., this just means you need to send a 1, the area code, and the phone number. Now, reverse

the string of numbers (that's right, reverse them. Don't ask me why this step is necessary. What are computers for, after all?) put periods between them, and add the Internet domain ".tpc.int". Whew!

So, to send a fax to Mr. Hughes, at 1-415-698-2510, your e-mail would be TO: remote-printer.Arlington_Hewes/Room_403@0.1.5.2.8.6.9.5.1.4.1.tpc.int

You can send a fax to multiple fax machines, or even a combination of faxes and traditional e-mail recipients. After the deed is done, you will receive electronic mail telling you if your fax was successfully sent or not.

FOR MORE INFORMATION

For a copy of the Frequently Asked Questions list on faxing from the 'net, send mail to "tpc-faq@town.hall.org" and you will automatically receive the FAQ via e-mail. The FAQ also covers advanced topics like using MIME to send fancy formatted text or graphics, and how to operate a fax server.

Fax sites are being added to the network on a regular basis - for a current list of faxable areas, send e-mail to "tpc-coverage@town.hall.org". There is also a mailing list for discussion of the fax service and its implementation.

To join, send a request to tpc-rp-request@aarnet.edu.au.

FAXABLE AREA CODES

Australia (+61)
 Canberra (+61-62)
Canada and the United States (+1)
 +1-313
 +1-317
 +1-408
 +1-415
 +1-508
 +1-510
 +1-615
 +1-617
 +1-718
 +1-800
 +1-818
 +1-909
 Brigham Young University (+1-801)
 Manhattan and Staten Island, NY (+1-212)
 New York City (misc), NY (+1-917)
 Temporary +1-301-981 (+1-301)
 University of Wisconsin, Madison (+1-608)
 Washington, DC (+1-202)
Denmark (+45)
 Copenhagen (+45-3)
 Greater Copenhagen (+45-4)
Germany (+49)
 Universitaet Dortmund (49-231-755)
New Zealand (+64)
The Netherlands (+31)
 Amsterdam (+31-20)
 United Kingdom (+44)
 University of Oxford (+44-8652)

If you have a question for an administrator that isn't covered on the FAQ or general mailing list, send e-mail to Arlington Hewes at tpc-admin@town.hall.org.

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BOOKS ON THE INTERNET

by Jack Rickard

We do occasionally mention published books on communications topics we think our readers might find useful or educational. In recent months, the number of books on the Internet appearing in our mailbox for review might lead us to believe the Internet is being marketed by the pound. And we would be remiss if we did not mention that the vast majority of these titles are uniformly bad - some probably dangerous, but most just useless. It would appear the Internet is the hot topic right now and publishers are throwing crap against the wall in an effort to find out what sticks - and at enormously proud prices at that.

That said, there are a few titles that for various reasons we've found to be quite useful. And we're going to try to "round em up" for you here en masse.

THE INTERNET NAVIGATOR

We would not normally expect a good technical manual to start with a John Keats poem about the discovery of the Pacific Ocean. Paul Gilster's **THE INTERNET NAVIGATOR**, published by John Wiley & Sons, Inc. does. And that wasn't the sole surprise in this book. Rather than try to diagram every resource available on the Internet in some sort of heirarchical form, this book, more than any other, takes the Boardwatch-style "exploration" approach. It is full of interesting places the author has located that offer interesting things for callers.

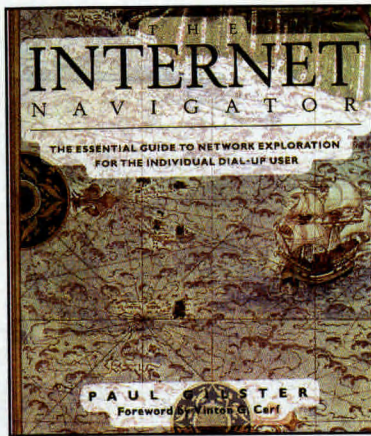
Hardly off the ground on page three, the book is already noting that you can ftp images of asteroids and planets with photos from the Viking, Voyager, and Magellan space projects from NASA's ames.arc.nasa.gov site. Page four notes you can obtain a map

of Finland from garba.uwasa.fi at the University of Vaasa in Finland in GIF format. Page 8 describes how to ftp the full text of U.S. Supreme Court decisions from ftp.cwru.edu. And you still have 462 pages to go.

The book also sports what is probably the most descriptive and useful strategy we've seen in print for getting ON the Internet if you are just starting your journey of exploration. It provides a complete list of FREENET's, describes the list of public access UNIX systems (NIXPUB), and goes into some detail regarding the commercial DELPHI/BIX offering of full Internet access for everyone. It provides you with a reasonably clear description of the basic UNIX commands you will need to pilot the Internet waters without the usual religious arguments and attempts to bring the true gospel of UNIX to the unwashed heathen.

The book does cover the basics of ftp, telnet, and electronic mail. The descriptions of electronic mail programs such as ELM and electronic mail "manners" was a bit cursory we thought. But the chapter Electronic Mail as a Gateway to the Internet provided some detailed and very useful instructions on retrieving files and accessing services from a basic e-mail account, and did so in very good order. It also provided very good descriptions of how to send electronic mail both TO and FROM commercial services such as CompuServe, MCI Mail, GENie, America Online, and others. It provided excellent descriptions of BITNET as well as Internet mailing lists. We found the information on Marty Hoag's NEWLISTS mailing list (info@vm1.nodak.edu), which serves as a forum for announcing new mailing lists, of significant interest.

Gilster (gilster@rock.concert.net) hits most of the bases with notes on Gopher, WAIS, World Wide Web, Veronica, and other Internet services. The writing style is quite readable and concise. I would rate it most useful as an explorer's handbook for those who have some familiarity with the Internet. Gilster clearly knows the subject and describes it well, but the book tends to be useful for those on the net, and there may be better choices for the novice who wants to get started. It is not particularly technical, but it does tend to describe things you can do better than how to do them. Overall, we found the Internet Navigator's



exploratory approach to the most apt for those interested in uncovering interesting and useful things to do on the Internet, and we were thoroughly charmed by the book from start to stop. And it sports one of the most interesting pieces of cover art we've seen on a technical book. At \$24.95, it is highly recommended. **John Wiley & Sons, Inc., Professional, Reference and Trade Group**, 605 Third Avenue, New York, NY 10158; (212)850-6497 voice; (212)850-6799 fax.

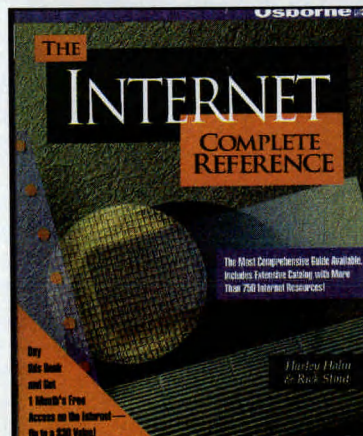
THE INTERNET COMPLETE REFERENCE

This one makes the "list of good Internet books" by default. Harley Hahn is most known for a book on assembly language titled **ASSEMBLER INSIDE AND OUT**. A slimish volume, it was so well written it has come to stand head and shoulders above everything on the topic - so much so that Microsoft has included a copy of it with all copies of their MASM Macro Assembler program. Hahn is a master at taking excruciating technical material and making it lucid for normal people - a gift. He's authored nearly a dozen books including **A STUDENT'S GUIDE TO UNIX** and **PETER NORTON'S GUIDE TO UNIX**.

His latest effort teaming with co-author Rick Stout is **THE INTERNET COMPLETE REFERENCE** published by Osborne McGraw-Hill. Initially, we thought the title a bit ambitious. The concept of a complete reference to a network that is growing by some 12% per month is a bit of an oxymoron. But after slapping this book around the desktop for a few weeks, and comparing it with all else in print, we're going to allow it. In 798 pages, Hahn describes more areas of the Internet, in more detail, than anything we've seen.

The book is indeed designed as a reference. It is full of tables such as a list of ARCHIE commands, basic Internet Relay Chat commands, it provides an extensive catalog of Internet Resources by topic. Appendix A is an enormous list of Public Internet Access Providers. Appendix B is a list of public ARCHIE servers. Appendix C is a list of public GOPHER clients. Appendix D is a list of WAIS servers. Appendix G is a comprehensive list of USENET News Groups if you can picture it in print - all of them. In short, where most Internet books tell you where to go find an electronic text file listing one thing or another, this book puts it on the page for you. As such, it is valuable for this alone.

But despite its reference format, Hahn is a natural teacher. And in the introductory chapters he provides some of the best explanations for new



users we've found on why things are the way they are, how they got that way, and what it means for the user. The description of what USENET is, how it used, how big it is, who runs it, etc. was excellent. Similarly mailing lists. The book does NOT go into how to setup newsgroups or mailing lists on your UNIX system in any technical sense. It is more a description of these things and how to use them as an end user. The result is a reference book handy for the expert because it lists commands and resources extensively, but most useful for the beginner who wants to know what it IS before they use it. The book is full of little HINT boxes that may be a touch on the cute side, but are actually pretty useful, particularly for those new to the Internet environment.

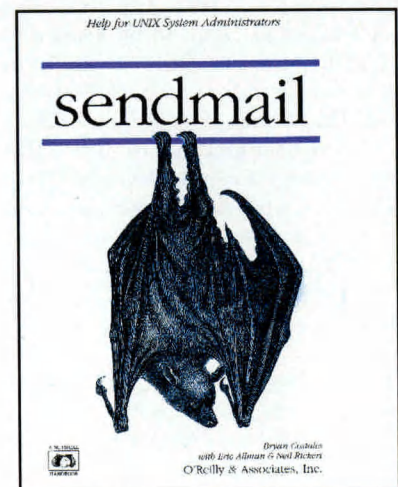
The Internet has promised to change the way people communicate

on a global basis, and in the same breath threatened to do so in virtually undocumented fashion. Harley Hahn's **THE INTERNET COMPLETE REFERENCE** changes all that by presenting more useful techniques and tips for using and understanding this global tangle of wires than anything we've seen in print. It's readable AND we can find stuff in it. HINT: This book will be the handbook for Internet users for many years to come. Interestingly, the book includes a coupon for a 1 month free trial membership to access the Internet through a variety of different providers depending on where you live. **THE INTERNET COMPLETE REFERENCE**, ISBN 0-07-881980-6, **Osborne McGraw-Hill**, 2600 Tenth Street, Berkeley, CA 94710; (800)227-0900 voice; (510)548-2805 International; (510)549-6603 fax.

SENDMAIL

At this point, most of us come in contact with the Internet electronic mail system on a UNIX system somewhere. At the heart of how these systems actually process and send mail is a program, titled appropriately enough, **Sendmail**.

Sendmail sounds simple, and it isn't. We've never met anyone who has actually configured sendmail. You inherit a sendmail configuration file (**sendmail.cf**), you might steal one, you might have someone give you a copy of theirs, and there are "sample" sendmail configuration files that get used. Veteran sysadmins will venture to make minute changes to the sendmail configuration - fearfully - with their eyes closed and their hearts pounding. This program is enormously powerful and flexible, and has the power and



flexibility to wreck a LOT of mail very quickly. All known documentation for this program in the past has been of the form "Here, use my config file as a template" along with a hearty "beyond the scope of this book" assertion.

O'Reilly & Associates, Inc. has carved out a publishing niche in UNIX documentation and more recently with books on the Internet. They not only rush in where angels fear to tread, but tend to do a remarkably competent job of it.

Their series of books with little animals on the cover have become a favorite here at Boardwatch. Their most recent, and most ambitious title is **SENDMAIL**, by Bryan Costales, Eric Allman, and Neil Rickert. For animal lovers, the book has a flying fox, a species of fruit bat found chiefly on the islands of the Malay-Indonesia archipelago hanging upside down on the cover, wryly apropos given the intended market for this book.

Eric Allman is actually the individual who wrote the **SENDMAIL** program while a student at the University of California at Berkeley. His original **DELIVERMAIL** program was shipped in 1979 with 4.0 and 4.1 Berkeley Standard Distribution UNIX. It's compiled-in configuration was not flexible enough - historical fodder for the complexity, and flexibility, of its successor - sendmail, which replaced **DELIVERMAIL** in the 4.1c BSD UNIX. In co-authoring this book, Allman acknowledges that the act of documentation forced him to rethink some minor bugs, weaknesses, and annoyances, resulting in a concurrent release of a version 8 (V8) sendmail program.

In 1987, Lennart Lovstrand of the University of Linköping, Sweden developed what came to be known as the Institutionen for Datavetenskap or IDA enhancements to **SENDMAIL**. Neil Rickert and Paul Pomes eventually took over maintenance of the IDA enhancements and released the UIUC IDA version and Neil focused primarily on the configuration of the program. Rickert is currently Professor of Computer Science at Northern Illinois University.

Bryan Costales is currently system manager at the International Computer Science Institute in Berkeley. He was been writing books and articles on

computers and software for over ten years, most notably, C from A to Z and UNIX Communications.

With Eric Allman, the original author, Neil Rickert, a contributor to later versions and expert on the configuration program, and veteran writer Bryan Costales, this book offers beyond all else, a pedigree and parentage unusually qualified in the current world of technical publishing where anyone who wants to be a writer "are one." It has clearly been in progress for some time and at no small effort and virtually automatically becomes the bible on UNIX mail configuration at its first printing.

The book is organized in four parts: Part 1 is a tutorial to introduce **SENDMAIL** to the beginner and as review for the more experienced. Part 2 covers the details of compiling and installing **SENDMAIL** on a UNIX system from the source code. Part 3 covers the daily administration of a mail system. Part 4 is the reference section detailing more than you will want to know about sendmail.

The resulting book is not light reading. It is a gruesomely technical manual documenting (finally) the sendmail program to get it to do almost anything you will need to do on a UNIX mail system - from just delivering mail on a local system, to sending mail worldwide on the Internet and delivering to UUCP connections to your machine. While O'Reilly is best known for their slimish "nutshell" books, this tome isn't one. It is a big book at 792 pages, and very detailed.

The automatic reaction is that if you run a UNIX system of any type, this book is a requirement for your continued existence, and if you don't run one, who cares. Actually, we don't run one, and couldn't put it down anyway. Skimming through all the detritus of configuring **SENDMAIL**, you can get an overview education on what happens to mail, aliases and mailing lists, ftpmail servers, security issues such as forging mail, and a lot more of the guts of how Internet splashes mail toward the ends of the earth. It explains Domain Name Service records, MX mail forwarding tables, and what an e-mail message looks like to these machines. It is not light reading for the beginner. But for those interested in how Internet mail really

works, this book provides a UNIX-eye view of it that struck us as the missing piece in our education on this topic. If you never get in the same room with a UNIX system, this book can be interesting for the technoid who wonders how it works. If you DO have to have anything at all to do with UNIX mail, by the time you read this, there will probably be a copy of this book on a shelf directly above the sysadmin's work station (about 24 inches above the keyboard - slightly to the right). If you don't find one there, order it. **SENDMAIL**, ISBN 1-56592-056-2, \$29.95, **O'Reilly & Associates, Inc.**, 103 Morris Street, Suite A, Sebastopol, CA 95472; (800)998-9938 voice; (707)829-0515 International; (707)829-0104 fax; Internet: bookquestions@ora.com.

UUCP GATEWAY FOR MACINTOSH FIRST CLASS BBS SYSTEMS

Information Access Technologies, who also operate the Holonet service providing UUCP connections to hundreds of bulletin boards, has released a software product titled **HoloGate:FirstClass/UUCP**. HoloGate allows BBS running on the Macintosh computer using SoftArc Inc's First-Class BBS software to connect to a UUCP host provider for Internet e-mail and USENET newsgroups.

Hologate supports UUCP g and UUCP G protocols with the maximum packet and window size. It also supports UUCP i and j protocols for simultaneous, bidirectional transfers with file transfer startup delays. It supports USENET News Groups in either unbatched, batched, or compressed formats and supports conference threading of newsgroup articles. Aliasing allows an Internet address to be associated with any mailbox on the BBS. The product also supports file enclosures in both BINHEX and uuencoded-AppleSingle formats.

A built-in scheduler allows the operator to flexibly schedule sessions with their host based on the day of the week and time. **HoloGate:First-Class/UUCP** single system license is \$500 with the protocol offered as a \$100 upgrade option. **Information Access Technologies, Inc.**, 46 Shattuck Square, Suite 11, Berkeley, CA 94704; (510)704-0160 voice; (510)704-8019 fax.

THE INTERNET IN THE NEWS

Interest in the Internet has expanded explosively in the past few years, with a particular push by the Clinton Administration's National Information Infrastructure proposal. As a result, what used to be one of the most esoteric areas of online activity has moved very strongly into the mainstream consciousness. Howard Funk, Executive Director of the Internet Society, has been compiling statistics on mentions of the Internet in the press over the past four years and we found the results interesting.

YEAR	NEWSPAPER	MAGS	BOOKS
1990	850	409	2
1991	1349	636	9
1992	1803	1058	15
1993	2717	946	33

The 1993 figures were as of October 16, 1993. He projects total newspaper articles for the end of the year at about 3600.

The Internet Society is a scientific and educational professional membership organization devoted to promoting the evolution and use of the Internet and its technology on a world-wide basis. Founded in 1992, ISOC provides the organizational framework for the development of Internet Standards through the Internet Architecture Board and the Internet Engineering Task Force. Dr. Vinton Cerf is President of ISOC. Membership is available to individuals at \$70. **The Internet Society**, 1895 Preston White Drive, Suite 100, Reston, VA 22091; (703)648-9888 voice; (703)620-0913 fax; Internet: isoc@isoc.org

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(internet) info@cic.net

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\$2 hour non prime time
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3217 N. Sheffield
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Fax# (312)248-8649
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(internet) info@mcs.com

\$2.00 hour first 5 hours
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1155 Kelly Johnson Blvd.
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Fax# (708) 671-0113
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(internet) rain@rain.org

\$50 month
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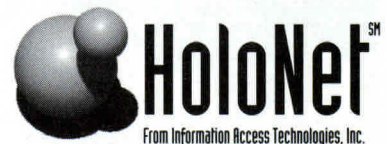
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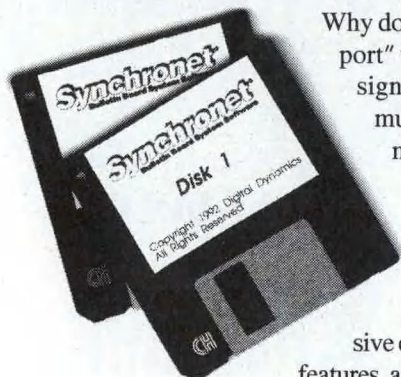


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Multinode chat	Yes	Yes	Yes	Yes	Yes
Multichannel chat	Yes	Extra	No	Yes	Yes
Private key by key chat	Yes	No	No	Yes	Yes
Offline reader support	Yes	Yes	Extra	\$199	\$99
QWK networking	Yes	Yes	Extra	No	Yes
FidoNet import/export	Yes	Yes	Yes	Yes	Yes
Send/receive NetMail	Yes	Yes	No	No	Yes
PostLink (RIME) support	Yes	Extra	Yes	Extra	No
RIPscrip GUI support	Yes	No	No	Extra	No
Novell/DOS LAN support	Yes	Yes	Yes	Yes	No
976/900 billing support	Yes	No	No	Extra	Extra
Real-time node activity alerts	Yes	No	No	Yes	Yes
Enhanced CD-ROM support	Yes	Yes	Yes	Extra	Extra
Multiuser SDK	Yes	No	Extra	Extra	Extra
Incoming FAX support	Yes	No	No	No	No
Chat between doors	Yes	No	No	Yes	No
Bidirectional file transfers	Yes	Yes	Yes	No	No
Multiple user command sets	Yes	No	No	No	No
Supports DOS doors	6 types	1 type	3 types	No	No
Hierarchical msg & file areas	Yes	No	No	No	No
External transfer protocols	Yes	Yes	Yes	No	No
Total price	\$699	\$1799	\$1635	\$1282	\$1494

Prices do not include CPU or modems. Features and prices compiled from vendor supplied information 2/93, are subject to change without notification. Wildcat!IM, PCBoard/M, MajorBBS, TBBS, QWK, FidoNet, PostLink, RIME, RIPscrip, Novell, and DOS are trademarks or their respective companies. Commercial or Shareware Toss/Scan utilities are required for some message network technologies.

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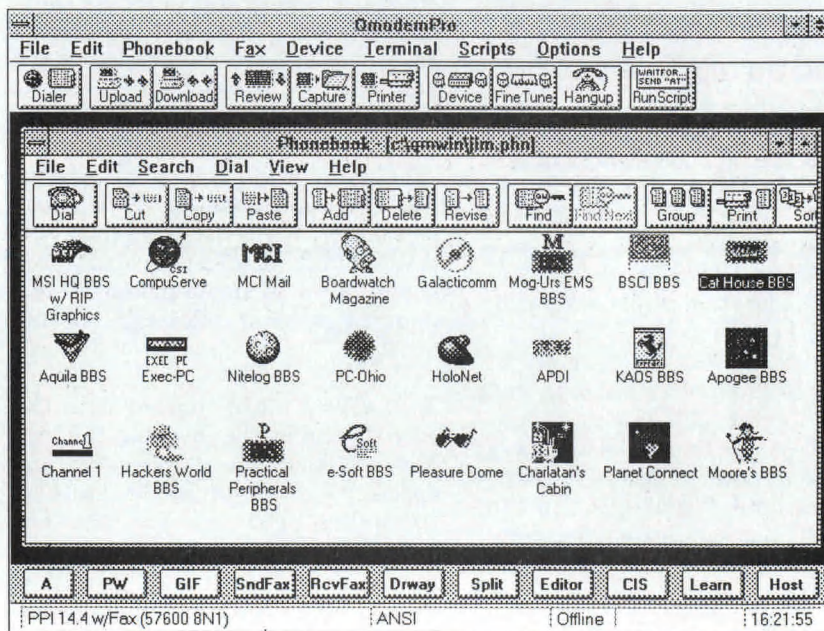
QmodemPro for Windows is the newest member of the *Qmodem* family, designed to make the most of today's most popular operating environment: Microsoft Windows. *QmodemPro for Windows* takes care of your data and fax communication needs, in one integrated package.

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QmodemPro for Windows is on sale now through Software, Etc., a national retail chain, and mail order outlets nation wide. *Special upgrade pricing available to current MSI customers* — reserve your copy today by calling our toll-free *QmodemPro for Windows* order hotline.



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ACCESS TO GOVERNMENT

CALIFORNIA'S NEW LEGISLATIVE ACCESS PROVIDES MODEL FOR OTHER STATES

by Jim Warren

California's Assembly Bill 1624 (by Bowen, D-Marina del Rey) provides comprehensive online public access via the public nets to information about legislation in process and to already-enacted state statutes, without charge by the state, all mandated by law. On Oct. 11th, the last night California's Governor could act on AB1624, he signed the bill.

Like most new laws, it takes effect Jan. 1st — and there is reason to believe that public electronic access will actually be possible within a week or two of that date, perhaps even within a day or two.

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This kind of public-access legislation can be implemented in any state.

Almost *anyone* can do it. Here's how (which works equally well for any legislative effort that would enjoy public support):

1. Find one or several legislators willing to author the bill. The most likely candidates are those who have authored successful public-records and open-government legislation in the past. Call your legislative representatives' offices and ask; they're easy to locate.

Your authors should be members of the majority party in your legislature. Reality note: Legislation by minority-party members is much more difficult to get passed and much more likely to be gutted during partisan turf tiffs.

It is essential that the author have an aide — preferably a senior aide — who is interested in such public-access legislation and is willing to take on the burden of shepherding the bill, with his or her boss's approval. Reality note: Expect almost no contact with, nor significant assistance from, the legislators; depend on the staffer. The authors' functions are to protect the

bill and round up the votes for it. Beyond that, they're swamped.

If possible, the authors should be senior legislators, ideally members of Rules or Budget committees. Reality note: When Rules and Budget majority-party members want something, they generally get it.

2. As soon as possible — even before finding the author(s) — begin building an online and off-line coalition of supporters. Individuals, community leaders, reputable nonpartisan public-sector and private-sector organizations and reporters, editors and radio talk-show hosts.

Set up an email distribution-list for those who are online.

For those who still suffer the antiquity of being electronically disconnected, set up at least a snailmailing list, plus a telephone tree for key contacts — especially major media contacts.

Keep your bill-authors or prospective authors updated on the size and reputability of the list — through your staff contact. Body-counts of potential voters is the ultimate political lever; flaunt it (without inflating numbers); use it!

3. Keep in close contact with the staffer who is shepherding the bill. They will know who its supporters and opponents are — targets for praise, or for vigorous public pressure. They will know what issues, concerns and complications are on the horizon. Most importantly, they will know when hearings will occur and what legislators need to receive public input — and when — including those legislators' key staffers, fax numbers, etc.

4. Monitor the wording of the original bill and each of its amendments like a hawk. The staffers who will draft the language are very knowledgeable of legislative and legal requirements but are almost invariably technologically naive and/or illiterate (as much so as most of us are about their areas of legislative expertise).

Don't hesitate to suggest — or urge! — language changes as soon as you notice any imperfection or possible

misinterpretation or vagueness in an amendment. The sooner; the better — preferably while the amendment is still in an informal, draft stage. If you develop a good working relationship and trust with the staffer, you will often have access to such drafts.

5. As hearings and votes approach, issue fast, accurate online, snailmailed and telephone updates and "action alerts." (Bowen and her staff have said that AB1624 simply would not have passed without the public pressure that flooded in before each hearing and vote — which was almost entirely prompted by online alerts I issued, that many dozens of fellow supporters cascaded across the nets, plus some crucial phone trees by some public-access advocacy organizations.)

6. Don't let up. Don't take vacations. Many a bill has suddenly been sunk when the leadership of its support relaxed during what appeared to be a lull.

Also: Focus only on the one bill, no matter how zealously you believe in other "righteous" legislation. Reality note: Attempting to promote multiple political agendas at the same time will fragment your attention and energy. Much worse, it will often generate suspicion and distrust of all of your efforts, and endangers and fragments the support you can organize for any of them.

LOBBYING THE LEGISLATURE

When you begin promoting legislation — even public-interest legislation — by your legislative activism, you become a <gasp!> lobbyist.

Don't involve your employer or company — often classified as a reportable political contribution-in-kind.

Expect legislators to be almost totally ignorant of the issues, the potentials of online access and certainly of the technology. Expect almost all of them to occasionally *sound* supportive but usually be totally uninterested in the bill.

Expect them to be highly suspicious of your motives. Reality note: They are so inundated with hustlers wanting legislation that is personally beneficial, that the notion of activists actually wanting something merely for the public good is typically greeted with beady-eyed suspicion.

And the notion that programmers would volunteer to assist with implementation pro bono, without getting something in return, is typically rejected as being simply unbelievable.

FOR THE CYNICAL CITIZEN

I say this from personal experience as a longtime activist and sometime political irritant:

Contrary to popular (cynical) belief, most elected officials — federal, state and local — are quite willing to have most of their proposed statutes and ordinances publicly disclosed. (Appointed and career bureaucrats, as opposed to elected officials, too-often practice the opposite viewpoint.)

Most elected officials feel that most legislation they author is "good," and would be supported by the public — if the public only knew about it. (Admittedly, they sometimes have to talk to themselves a lot in order to convince themselves how "good" some of their special-interest legislation really is — but they're good talkers.)

Most also believe that "bad" legislation — always authored by someone else, of course — would be defeated, if only the public knew its details and ramifications.

And the vast majority of government officials feel that they and the policies in which they are interested don't get nearly the publicity and public exposure they should have — from sound-bite newscasters and all-the-news-that-fits newspapers.

THE CALIFORNIA MODEL, VERBATIM

If you're gonna pursue such ventures, you may as well try reading some legislation — and have a model to work from. Though a bit tedious, it is actually reasonably intelligible.

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This is AB1624 as it was signed into law [bracketed notes are mine]:
[First, the non-functional principles.]

"SECTION 1. The Legislature finds and declares that it is now possible and feasible in this electronic age to more widely distribute legislative information by way of electronic communication in order to better inform the public of the matters pending before the Legislature and its proceedings. The Legislature further finds that it is desirable to make information regarding these matters and proceedings available to the citizens of this state, irrespective of where they reside, in a timely manner and for the least possible cost."

[Now, the enforceable, operational specifics.]

"SEC. 2. Section 10248 is added to the Government Code, to read:

"10248. (a) The Legislative Counsel [who operates the Legislative Data Center] shall, with the advice of the Assembly Committee on Rules and the Senate Committee on Rules, make all

of the following information available to the public in electronic form:

"(1) The legislative calendar, the schedule of legislative committee hearings, a list of matters pending on the floors of both houses of the Legislature, and a list of the committees of the Legislature and their members.

"(2) The text of each bill introduced in each current legislative session, including each amended, enrolled [passed by the Legislature] and chaptered [signed or otherwise passed into law] form of each bill.

"(3) The bill history [hearings, votes, etc.] of each bill introduced and amended in each current legislative session [in California, a session is two years; some bills are completed in one year, like AB1624; others are "two-year bills"].

"(4) The bill status [remaining committee hearings, etc.] of each bill introduced and amended in each current legislative session [about 5,000 bills are introduced in a two-year California legislative session].

"(5) All bill analyses prepared by legislative committees in connection with each bill in each current legislative session. [Partisan analyses by party caucuses are sometimes more important, but are apparently *not* included in AB1624. Try to get them included.]

"(6) All vote information concerning each bill in each current legislative session.

"(7) Any veto message concerning a bill in each current legislative session [if a Governor vetoes a bill, he or she usually explains why — or gives excuses, depending on your viewpoint].

"(8) The California Codes. [the state's laws or statutes; previously sold on magtape for over \$200,000 per copy]

"(9) The California Constitution [which includes enacted ballot initiatives, which helps make it a *bizarre* document!]

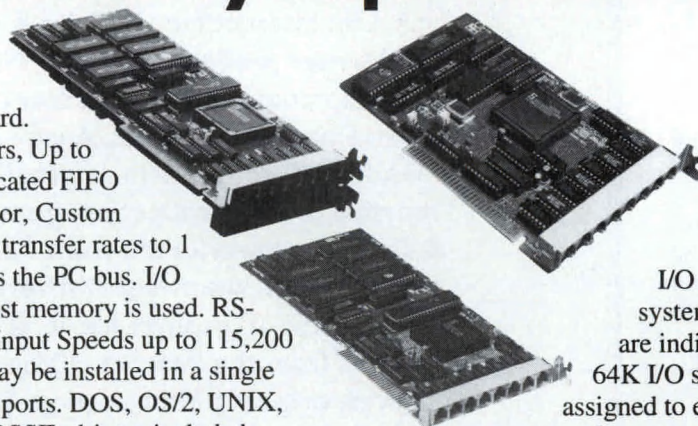
"(10) All statutes enacted on or after January 1, 1993 [this is essentially redundant with (8), but assures continuing updates of the codes].

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"(b) The information identified in subdivision (a) shall be made available to the public by means of access by way of the largest nonproprietary, non-profit cooperative public computer network [i.e., via the Internet, which in turn is gatewayed to Fidonet, Delphi, GEnie, America Online, CompuServe, etc. — when I suggested this phrasing, I assumed it was best to be generic, rather than show Internet brandname loyalty and risk giving legislators something to pick at].

"The information shall be made available in one or more formats and by one or more means in order to provide the greatest feasible access to the general public in this state.

"Any person who accesses the information may access all or any part of the information.

"The information may also be made available by any other means of access that would facilitate public access to the information. [Although I suspect it wasn't intended, this clearly authorizes independent BBS and computer-host operators to systematically copy all information, continuously update their files, and offer access and value-added options, limited only by their imagination!]

"The information that is maintained in the legislative information system that is operated and maintained by the Legislative Counsel shall be made available in the shortest feasible time after the information is available in the information system [the Legislature's \$25-million internal system used by staff throughout the Capitol and in legislators' district offices. This, it turns out, is a potential problem. It seems that the legislators' own internal information system is sometimes days or even a week or more behind. In a previous version of the bill, I had gotten language included that specified a time limit for public availability based on when the electronic copies were sent to the Office of State Printing for overnight printing of the paper bills. But the Legislative Counsel managed to slickly skewer that language by behind-the-scenes manipulation in the Senate].

"The information that is not maintained in the information system shall be made available in the shortest feasible time after it is available to the Legislative Counsel. [This is sometimes a

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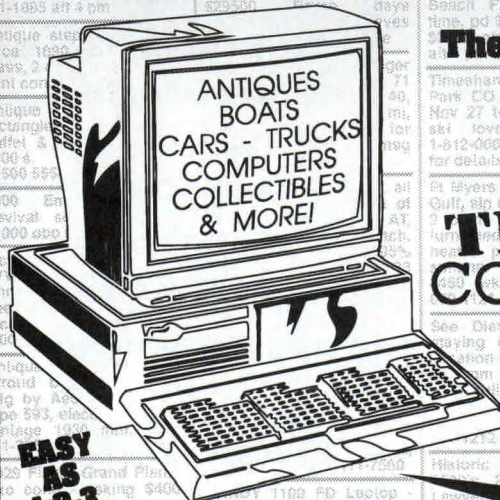
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major problem regarding the crucial analyses of bills and their impacts.]

"(c) Any documentation that describes the electronic digital formats of the information identified in subdivision (a) and is available to the public shall be made available by means of access by way of the computer network specified in subdivision (b).

"(d) Personal information concerning a person who accesses the information may be maintained only for the purpose of providing service to that person.

"(e) No fee or other charge may be imposed by the Legislative Counsel as a condition of accessing the information that is accessible by way of the computer network specified in subdivision (b). [boldface added]

"(f) The electronic public access provided by way of the computer network specified in subdivision (b) shall be in addition to other electronic or print distribution of the information [to state the obvious].

"(g) No action taken pursuant to this section shall be deemed to alter or relinquish any copyright or other proprietary interest or entitlement of the State of California relating to any of the information made available pursuant to this section." [Some Sacramento powerhogs actually propose that records about legislation-in-process might be public, but are nonetheless the exclusive property of the Legislature!]

Jim Warren 345 Swett Rd., Woodside CA 94062; (415)851-7075; Internet: jwarren@well.sf.ca.us has been a computer writer, lecturer and organizer for more than 20 years. He founded InfoWorld, the Computers, Freedom & Privacy conferences, the huge Computer Faires of the '70s, was founding host of PBS' "Computer Chronicles" and founding Editor of Dr. Dobb's Journal.

He began working as a minicomputer programmer in 1968, holds three graduate degrees and has taught computing at Stanford and other universities.

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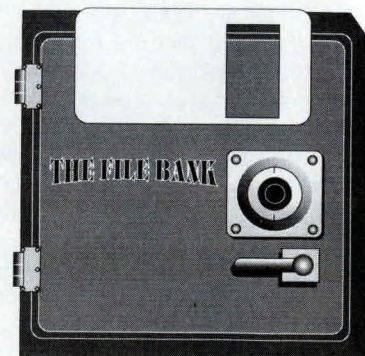
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SURFING THE INTERNET VIA CABLE

Two new technologies have come on the scene recently, and when used together, they promise some exciting new capabilities for Internet users.

The first is the **National Center for Supercomputing Application's (NCSA) Mosaic**, an Internet search and retrieval tool for the Macintosh. According to NCSA, Mosaic is an enabling technology that allows users to access networked information from around the world with a click of a mouse. While many services are available to access this expanse of data, Mosaic now promises transparent, seamless access to nearly all of these information services including: Gopher, WAIS, WorldWide Web, FTP, Usenet News, Telnet, and Archie.

Based on the World Wide Web software of CERN, this new Internet interface allows the user to retrieve and display a broad range of data including: the graphical display of plain text, rich (formatted) text and hypertext. It also supports inlined display of graphics, images, audio clips, video sequences, and scientific data as sections of multimedia and hypermedia. O.K. so now we've got ease of use and multimedia covered: Great, but how can we take advantage of an interface that can transfer video clips when my modem

can only swallow chunks of data at V-dot speeds?

Enter Hybrid Networks, of Cupertino, CA. Hybrid has recently announced it's the first potentially affordable networking system capable of delivering a broad range of high-speed services to homes, schools, or offices using existing communications infrastructure. The Hybrid Access System (HAS) is unique because it takes advantage of today's existing cable and phone technology. Using standard TV cable, HAS can deliver a high-speed, 10-Mb Ethernet-compatible, data link to remote users. This "downstream" channel is an asymmetric half-duplex signal. The return channel makes use of the public phone lines that operate at standard modem speeds (9.6 to 64 Kbps). The user at home requires only a cable line, telephone line, and a personal computer. The data services that HAS can provide include remote TCP links and other providers, including corporate headquarters, to greatly assist Internet access and telecommuting.

Thankfully, since HAS supports Mosaic, navigating around the Internet will be simplified immensely. HAS already has been working with TCI Cablevision in San Jose and Cupertino, California testing the system in homes and schools. Originally funded primarily by the U.S. Government's Advanced Research Projects Agency, major HAS contracts with other cable providers in Northern California are waiting in the wings. Hybrid also plans to expand cable partnerships into other leading metro areas including Boston, New York, Washington, those three cities in Texas, and of course L.A. Pricing for a 10-Mb feed to the Internet is expected to cost less than \$100 a month; probably as an additional premium service to be billed by your cable company.

"By providing a high-speed pipeline to any remote site, the Hybrid Access System extends the Internet to millions of remote users around the world," noted Howard Strachman, president and ceo of Hybrid. "Working with this new, simplified interface (Mosaic), it doesn't take the technical savvy of a software expert to decipher the secrets of the Internet. With the 'New Internet,' the secret is out."

Actually, you need more than a computer, cable and phone line. What you really need is Hybrid's Remote Link Adaptor (RLA) that provides the connectivity interface for HAS. The RLA Model 100 is compatible with any Ethernet-connected PC, Mac, or workstation while the Model 200 SBus is compatible with any SBus workstation. Priced at \$1,495 and \$1,295 respectively, the RLA adaptors provide the asymmetric, high-speed interface between the cable signal and the computer. Users connect this to their standard Ethernet port, and connect their cable and phone (modem) line to the RLA. Once the return line is activated through the modem line, the remote user can communicate with host computers or servers located on the Internet, or even with corporate headquarters.

Certainly an exciting idea, if not a very expensive cable converter box. But take a minute to think about what this means for your BBS. Can you afford a T1 or switched-56 line? What kind of content are you going to offer besides Night Owl or BBS-In-Box, when your ex-users are surfing the net receiving high-speed digital graphics from QVC or can FTP any number of servers around the world? Seemingly, the user gets more, while the buy-in to be a content or access provider goes way up. See ya.

Mosaic is available now on most well-stocked BBSs. NCSA Mosaic for the Mac Development Team (Aleks Totic, Tom Redman, Kim Stephenson, and Mike McCool; University of Illinois, 152 CAB, 605 E. Springfield, Champaign, IL 61820. Hybrid Networks, Inc., 20863 Stevens Creek Boulevard, #300, Cupertino, CA 95014; (408) 725-3250 (voice).

RESNOVA TO SUPPORT APPLE-SEARCH

As reported in this space in the July issue of Boardwatch, Apple has finally shipped its AppleSearch. And now that we know how much it costs, we also note a flurry of third-party developers announcing their support for the client-server information and text retrieval-gathering software.

AppleSearch is a new software tool that lets users access information on a server by providing full text search and retrieval. Users can search for information on any number of user-definable topics, or let AppleSearch act as an agent in performing those same searches periodically at designated intervals. Supporting Boolean query language and fully-customizable proximity searches of key words, AppleSearch ranks documents in order of relevance to the search criteria. XTND file format translators extract plain text from various document types so users can view the text regardless of the document's native format. Indexes can be generated as well, for documents in shared folders, or on CDs.

Using a newspaper metaphor, the AppleSearch Client software provides electronic reporters and customized newspapers as an intuitive way to retrieve information. The AppleSearch reporter created by the user "finds" the stories it was sent to look for on the selected server volumes. It then delivers a list of all of the stories it found ranked by relevance to the initial search criteria. Then users can choose to view the text of the document or view the full document in its original format. AppleSearch can also display the selected "stories" in a "newspaper" created automatically, and even deliver it to a specific location on a user's hard disk. These reporters can be saved for future or workgroup use in a networked environment.

Anyway, it shipped. The server application bundled with 10 clients costs \$1,799; and a client 10-pack is priced at just \$499, certainly not unaffordable. While the server requires a 68040 with lots and lots and lots of memory, the client can get by on any Macintosh running System 7.

But like the headline states, ResNova, developer of NovaLink Professional, has announced it will soon add support for AppleSearch. While connected to a NovaLink server, remote users will be able to access an AppleSearch server on-line. So connected, NovaLink clients will be able to conduct high-speed text searches with English-like queries. ResNova reports that AppleSearch will be built into the NovaTerm and RIPTerm client interface to make remote, cross-platform searches available to anyone.

Other BBS/telecom- and data-related companies have also announced support for AppleSearch. CASPR Inc. of Sunnyvale, CA, will use AppleSearch with its own Library Browser, a utility for searching library files and records. Knight Ridder, a supplier of digital photos, graphics, and text to newspapers around the world will add support of AppleSearch to its PressLink services. Mainstream Data, of Salt Lake City, UT, will release a version of their Mainstream Newscast, its broadcast-news and information services, that is compatible with AppleSearch. Finally, Ensemble Information Systems, makers of Relevant, a computer interface for DowVision, Dow Jones' news and information service, has announced its support of AppleSearch to provide natural-language searches for information in the Dow Jones service. ResNova Software, 5011 Argosy Street, Unit 13, Huntington Beach, CA 92649; (714) 379-9000 (voice).

CHECK OUT THESE MAC BOARDS

The Women's Information Resource & Exchange (WIRE) opened its electronic door for business in October in search of 500 Founding Subscribers for the first-ever commercial conferencing system targeted toward women. An account on the WIRE is available today and costs \$15/month, which includes 2 hours of free online time with additional hours priced at \$2.50 for direct dial-in and Internet access. SprintNet access is available for non-local members at an additional cost.



Ellen Pack, co-founder and President of WIRE

Considered by many a vital information clearinghouse for "women's issues," WIRE will provide individuals and organizations with easy access to up-to-date databases, discussions, alerts, abstracts, resources, and experts on matters concerning health, politics, career, finance, technology, parenting, education, lifestyle, and many other issues of interest to women. "We think WIRE will be a great new destination on the information superhighway," Ellen Pack, co-founder and president of WIRE said. "There's a wealth of information for women to tap into: health studies, tips on starting a business or traveling alone, parenting stories, legislative updates, funding sources, and discussions about art and literature. WIRE is providing a place for women around the world to get connected to what's happening and to each other."

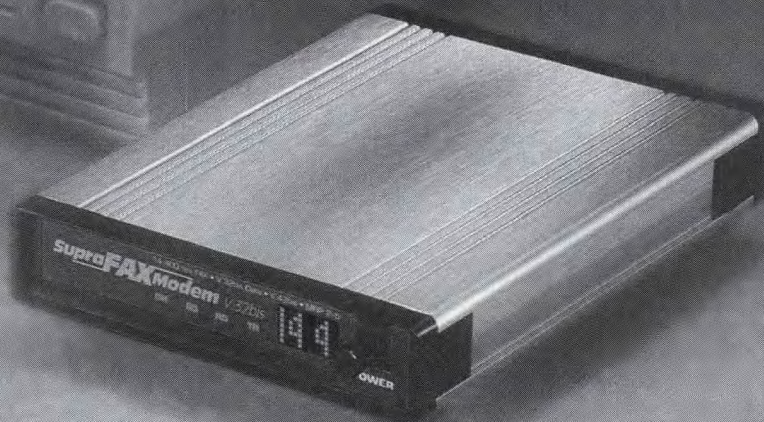
Based on a customized FirstClass system from SoftArc, of Scarborough Ontario, WIRE provides users with cross-platform graphical user interface supporting Macintosh and Windows users, with a DOS version to be announced soon. A command-line interface is also available. Friendly customer support is available at no extra charge.

Currently, WIRE offers Internet e-mail, mailing lists, UPI Newswires, and UseNet newsgroups. Subscribers can also Telnet to WIRE using either a VT-100 based command line interface or the Mac GUI supporting color, sounds and pictures. According to co-founder Nancy Rhine, WIRE is also working on providing a full range of popular services available via the Internet including, Gopher, WAIS, Archie, FTP, and others. Based in South San Francisco, WIRE's computer hardware and connections are supported around the clock by Pandora Systems of San Francisco. WIRE can be contacted at 435 Grand Avenue, Ste. D, South San Francisco, CA 94080; (415) 615-8989 (voice); info@wire.net (e-mail).

Compared to many GUI Macintosh BBSs, Sound and Sight is a Hermes-based service that offers neither in terms of interface. But it's still got plenty of vision. Here are some notes from sysop Dan Hoffer, aka Wild Mushroom:

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"Hi Bill, Let me tell you a bit about my BBS. The name of my board is Sound and Sight. It is one of the (approximately) 10 Mac-only boards in all of Massachusetts. As I am a student with limited resources and unable to afford FirstClass or TeleFinder, the board uses Hermes. Nevertheless, there are various features that make the board unusual.

"A bit of the board's history: the board has been passed down a few times. I am its third sysop (and, IMHO, its most successful :-). I have been running it for exactly a year and one week, as of this writing. I have been having trouble getting FIDO up, but it should be fixed soon. I use a Mac IIx1 9/80 with a Bernoulli 90 meg removable drive and five cartridges.

I enjoy intelligent, sophisticated adult conversation. Consequently, I have structured the message subs to support four "Debate" subs. The debates in these subs range from opinions of the U.S. in Somalia, Bosnia, and Iraq; Clinton's economic plans; crime in the inner-cities and various forms of prevention (including the legalization of drugs); homosexuals in the military; the accuracy of the S.A.T. test in determining aptitude or intelligence; etc. In addition, there is a Mac sub for Mac-related questions or discussions; a "Telecommunications" sub for BBS ads or modem-related questions, a sports sub, and other typical ones. An anonymous "Stress Relief" sub allows users to work out anger, and our on-line D&D game currently has 10 participants. The board is quite active and attracts people from all over the country and the world. "Sound and Sight" appears on state-wide and national BBS lists. I have users who call regularly from Oklahoma, California, Liechtenstein, Germany, and other parts of Europe and the U.S.

"There are a few other enjoyable aspects. I run 33 externals, including games. On-line g-files contain various jokes, as well as some historical information, such as the U.S. Constitution and Martin Luther King's "Dream" speech. Many shareware files are available for the Macintosh, including especially large QuickTime, Utilities, and Games directories. Text files and GIFs can be downloaded by IBM users.

"Most importantly, the feature that sets Sound and Sight most apart from

other boards is its use in an inter-scholastic community service project that I am running. About a year ago, I discovered that one of my users (anonymous) has Muscular Dystrophy. After spending a lot of time chatting with him, I realized that he, living in his hospital bed, is very lonely. He was just beginning to discover how he could use the modem to communicate with other people. Simultaneously, I had been feeling regretful that when I was in elementary school, so little emphasis had been placed on telecommunications. I felt somewhat inclined to try to improve the quality of computer education—through telecommunications—at the elementary school level.

"And so B.E.S.T. (Brookline Elementary School Telecommunications) and B.I.S.T. (Boston Independent School Telecommunications) were formed. By combining my two interests, I realized that Sound and Sight could serve many people in many ways. By creating a pen-pal relationship through my BBS, elementary school students would learn about telecommunications and also overcome any discomfort they might feel about disabled students. Simultaneously, students with neuromuscular diseases would also learn about telecommunications, and could make friends outside of their limited environment.

"First, I obtained the support of the Kindergarten-through-twelfth grade Curriculum Coordinator, and taught a class for gifted students about telecommunications. I met with all the elementary school teachers in Brookline. Then, I called the regional branch of the Muscular Dystrophy Association, and was referred to the Massachusetts Hospital School—a school for students with any of 40 neuromuscular diseases. Finally, I met with the computer teacher there, and we prepared to begin the project.

"The project has not yet realized its full potential. Already, however, students with Cerebral Palsy and Muscular Dystrophy have started communicating with Brookline elementary school students, through Sound and Sight BBS. I have obtained the full interest and support of the Chestnut Hill School, and a 12th grade Science teacher at Brimmer. The instructor is significantly modifying her curriculum to include a semester-long unit on

neuromuscular diseases that uses my BBS as a medium for communication."

Bill sez: "FOOEY on GUI! Check out Sound and Sight and make a friend, better yet, make a donation to:" **Sound and Sight BBS**, Dan Hoffer, sysop; 14 Welland Road, Brookline, MA 02146; **(617) 232-5595** (voice); **(617) 738-8432** (BBS).

DIGITALNATION USERS DECLARE WAR!

Dear Editor:

You won't want to read what I have to say. I'll try to be as polite as I can. But first off, realize I do not speak in the legal capacity of Digital Nation. These are only my opinions which may or may not coincide with DN* or CSGI*.

Boardwatch Magazine has hired a writer to write about **DigitalNATION BBS** (operated by volunteers and CSGI*) in the most pretentious and immature way. I would question the integrity and ability of this writer immediately. This is not journalism, this is revenge of some sort or some other nonsense. The writer claims DN*, "goes a long way towards matching the rhetoric of the wannabe politicians it serves by offering a comprehensive program that attempts to cover all areas of life, while providing a slick-willy interface that looks great and sounds good, but doesn't yet deliver the beans as well as it could." I would like to know in what way did DN* express any political affiliations of any sort? They haven't. We have a red-herring kind of logical error here. This guy needs to go back to Debate 101 to learn how to construct logical arguments. Moreover, what BBS in a major city do you know of that does NOT "cover all areas of life"? I've seen many, many FirstClass-type BBSs and most try to be fair and cover all areas of life.

The writer contradicts himself. He says DN's custom interface is "without doubt the most advanced I've seen and deserves praise for its innovative design." However, a few paragraphs down, he states the system was a "morass" and "requires housekeeping." So, if the writer chooses to take the subjective voice, rather than the objective voice, which way is it? Does he praise it or fault it? Certainly the first argument should not have been made ("with-

LETTERS TO MACNEWS

out...design") without qualifiers at the end indicating disagreements on other matters.

He speaks of the university forums with: "I don't expect we'll ever see Grambling, Davis & Elkins, or Kent State listed. Typical D.C." However, why would it? I mean, it tries to serve the needs of the majority by finding sysops who can support these needs. Missing sysops, or missing the majority for a certain university, means no forum. Period. It's a wise decision based on the number of calls, the surveys conducted, and the limited drive space. Given enough Kent State users, a forum may indeed be generated. There is nothing DN holds against those universities.

The writer appears to employ a vague sense of humor when he speaks of political forums because in the same paragraph he also said the equivalent of, "Oh, by the way, this is similar to Big Brother and the Ferret forums." He says: "Of course there's a politics section grouped into capitol hill, economy, and big brother topics. Take your pick, it's all the same. Senator Kennedy's office, one of the few Mac shops on the hill, uploads numerous PR pieces, while the pet section had an active ferret subsection. Located in a town where government is, digitalNATION's QuickTime file library was full of Iraqi war footage, NASA hype, and naval-action clips."

To finish my arguments, I first quote from the writer: "Though impressive, I wonder how active each of those conference sections really is, or is it all there for show just to help the caller get the feeling that this isn't really a BBS but a steroid-pumped regional alternative to CompuServe or AOL." Well, so? That means opportunities for filling in those forums with meaningful messages. Realize that DN was largely started to support just the clients of CGI, Inc., and ended up assisting other groups until they finally went public. It was a generous offer. Nowhere does the writer indicate they have 12 phone lines dedicated to the public for free and at speeds up to 19.2 Kbps (using compression). The fact that they may or may not have hopes to become the next CompuServe, even if by accident, should be largely applauded because they are free.

Mike McKee, Visual OOP sysop
DigitalNATION BBS*

Dear Mike,
To say positive and seemingly negative things about a particular feature of a BBS shouldn't be such a cause of confusion for you. DigitalNATION certainly has pushed the envelope for customizing the FirstClass GUI interface. And, the morass of open windows on MY screen was something that bothered ME. How is that a contradiction?

As for BBSs, whether FirstClass or not, many more in fact do not attempt to be everything to everybody, but somehow specialize in some area to add value and distinguish themselves from their competitors. That is a good thing. For instance, check out WIRE that specializes in women's issue or Sight and Sound which offers services to neuro-muscular handicapped users (both reviewed in this issue).

As for placing a kazillion conferences on a new board, thinking, in your words "That means opportunities for filling in those forums with meaningful messages," seems to me more an exercise in telling the market what it wants rather than serving it.

BGR

Dear Editor:

I read the article about digitalNATION in Boardwatch and couldn't help but get off my duff and reply. The tone of the article was indeed sarcastic, and quite in keeping with Boardwatch's general arrogant attitude towards non-PC-based boards. In fact it has only been in the last couple of months that Boardwatch has even begun to mention the Mac BBSs out there.

I have tried just about every type of Board - both PC and Mac- and given all the pluses and minuses of the different BBS software, my personal preference is for a First Class board. A simple command-W will close any window you open by the way. I like the fact that digitalNATION is an attempt at a "regional AOL" - I hope they regionalize the rest of the US at 14.4 baud for free too! The problem with AOL and CompuServe - besides the baud rate - is that they nickel and dime you to death after your 4-5 "free hours" are up (for which you pay a monthly fee) and

there is a paucity - like none - of conferences with any local interest.

I hope in the future that Boardwatch reviews of BBSs will have an underlying theme of encouraging your readers to check it out for themselves while at the same time objectively mentioning the pros and cons of a particular board - the slam of the DC political scene was gratuitous. And instead of wondering how much traffic was in a particular conference, why not check it out and find out rather than use a topic as an opportunity to continue to weave a sarcastic thread. It seemed to me that the article was more an exercise in cleverness written by someone attempting to flex their questionable writing skills than an informative piece. I am not a writer or a literary critic, but it seems to me that just like a good movie, a good article shouldn't draw attention to fact that it is an article. Everyone benefits by more people going online to different boards. And, although the lion's share of BBSs are PC based, I hope Boardwatch increases it's coverage of the Mac BBSs out there. You'll sell more subscriptions.

Jeff Evans
jeff_evans@capmac.org

Dear Jeff:

FYI: I have been writing about Mac BBSs in Boardwatch since April of 92, not just the past couple of months. And maybe the editor doesn't care about his magazine or thinks what I write is okay since he keeps letting me do it. Actually, I'm just trying to have fun with what I write since most computer coverage is so full of its technical self importance. The use of theme and metaphor in informal essays is not uncommon despite your objections. If you want boredom, read a phonebook. What should an article be if not a well-written article? Not that all of mine are, but I try. Finally, I think the problem is not so much you wanting "information" as it is that you just didn't like the information you read because it offered an opinion that was different than yours.

BGR

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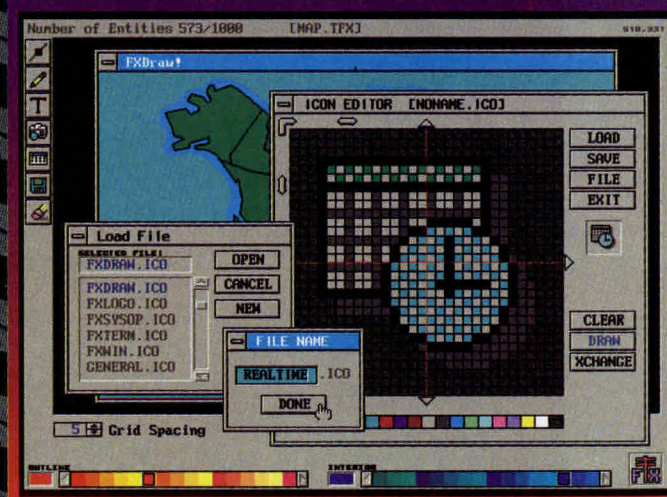
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EDUCATION LINK

by Bill Gram-Reefer



ACADEMY ONE PROJECTS FOR 93/94

Curriculum-based educational computing (CBET) is a major focus for the Academy One program sponsored by the National Public Telecomputing Network (NPTN). Especially accessible by isolated teachers and their students, Academy One's flexible telecomputing special programs help integrate telecommunications as an invisible, every day part of schooling.

Academy One's projects for the current 93/94 school year include projects involving: simulations, science, foreign language, current events and prominent people, literature, civic involvement, educator training and support, and social-cultural programs. Some projects are seasonal, or time-limited, while others are ongoing. Here's a sampling, followed by some e-mail addresses where you can ask for more information.

NESPUT's Salute to Space Travel—is a special event scheduled for February 94. NESPUT is the National Education Simulations Project Using Telecommunications, and this event pays tribute to space programs from around the world. A school can either do research on one of the historic space missions, or conduct a simulation at their school, posting reports to Academy One.

NESPUT is sponsoring many other simulation projects over the course of the school year, including simulated space shuttle launches and a virtual Olympics. Contact: Bob Morgan (aa629@cleveland.freenet.edu).

Want to do some heavy-duty climate modeling, ray tracing, or molecular configuration with your science class, then contact the **National Education Super computing Program (NESP)**. NESP provides access to the Lawrence Livermore Lab's super computer. Teacher training, simulation software distribution, and curriculum integration are combined with a telecommunication component that stresses collaboration and joint research to conserve resources and maximize participation. Contact Linda Delzeit at: linda@nptn.org

Save the Beaches is a program that gets kids out on the beach to clean up the litter.

Scheduled for April-June, Save the Beaches is a program that gets kids out on the beach to clean up the litter. Then, in the classroom, they identify, sort weigh, and record results in graph and table formats for reporting to other participants. A discussion ensues concerning the environment and how students might use alternative products that are more biodegradable. Contact Nina Hansen at: ahansen@uhavax.hartford.edu

La Classe Globale Francophone is an ongoing electronic classroom designed for communications in French between young people of all ages and all countries. The area also includes news from France in French 5 days a week, and includes moderated discussions with lesson plans that are updated regularly. Contact Yona Webb at:

aa844@cleveland.freenet.edu

This coming March, follow the Itditarod as either a newsgroup or as listserv; Contact Willoughby Middle School at: aa695@cleveland.freenet.edu

Although the Whitbread yacht race around the world began September 25th, you can still tune in for the exciting conclusion in January 94 as students receive reports on the boats and crews, along with educational materials covering geography, marine life, weather, sailing, map-reading, and navigation. Contact Ann Culp at: arc@nptn.org

Scheduled for March, get your students involved in a Sonnet writing contest; cash prizes! Contact Marge Cargo at: mcargo@eis.calstate.edu

Bill Gram-Reefer, based in Concord, CA, is president of **WORLDVIEW**, specializing in connectivity and communications. E-mail Bill at: wk05156@worldlink.com

DIGITAL Dreams

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All PCBoard SysOps are winners, but we'd like to spotlight a few.

Boardwatch Magazine September 1993 Readers Choice Awards.



FIRST PLACE SOFTWARE CREATIONS

The top BBS in the Boardwatch 100 Readers' Choice Contest was

Dan Linton's Software Creations BBS in Clinton, Massachusetts. The system started in December 1989 with one telephone line on a DTK XT, a 2400 pbs modem, and a 209 MB hard drive. By the following October, the system was up to 4 lines, using U.S. Robotics HST Dual Standard modems, a 386 MB hard drive, and a LANtastic network to tie the computers together under

PCBoard BBS software. With Linton's background in hardware design, the system largely served as a technical information center for other local BBS operators.

In March 1991, Linton released his first shareware program, titled Picture Puzzle. The popularity of the system increased as it became known as the home system of Picture Puzzle. As more and more BBS operators and callers from around the country called to get the latest version of this software, Creations blossomed. Today, Software Creations runs PCBoard version 15.0, Novell 3.11 local area network, and other top services. Dan has developed a following around the country. Congratulations Dan. For those interested, you can reach Software Creations' BBS at 508-368-7139.

These are just a few of the many PCBOARD users in the top 100 readers choice poll.

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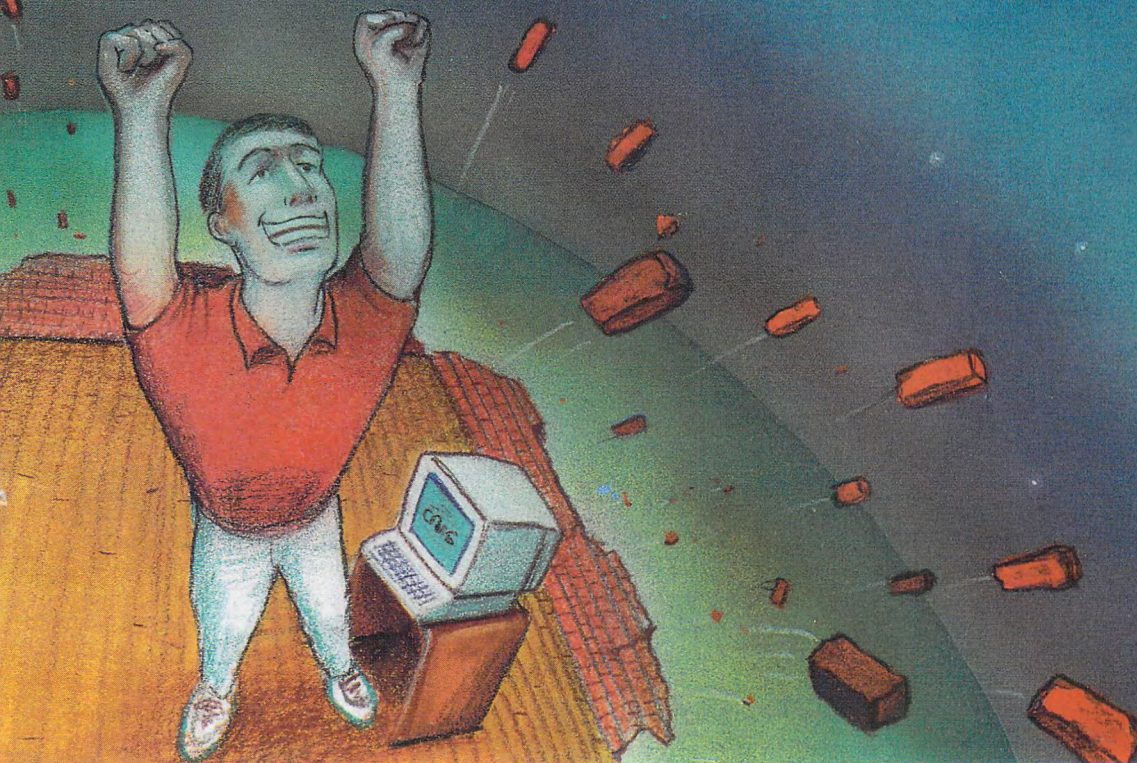
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SHAREWARE UPDATE

Thom Foulks



FLOPPY DISK FILING

Here's a warning about **Smartcat Plus for Windows**: After only an hour of using it, you'll likely be inclined to throw away your present floppy disk cataloging system — even if means re-cataloging every disk you have! In fact, that MAY be a good idea, because SmartCat can optionally call a virus scanner to examine a disk's files, prior to adding them to its catalogue. (Support for McAfee is built-in, but that can be revised for other scanning software.) Are your archive files virus-free?

SmartCat does all the obvious things — gathers file names from floppies, extracts names from archive formats (ZIP, ARC, LZH, PAK and ARJ supported), adds all the names to a searchable and sortable database, and provides a highly customizable label-printing function that lets you print to any label design. The only thing you have to do is keep feeding disks into the floppy drive. That's just for starters. Selected lists of files can be copied to the Clipboard, for further tinkering as you choose. SmartCat (in the \$39.95 registered 1.5 version) takes full advantage of Windows 3.1's [extensions] capabilities. You can double-click on a .TTF from the catalogue file, insert the proper disk, and SmartCat launches your TrueType viewer to examine the file. Or, launch a program from an .EXE file, extracting it from a .ZIP in the process.

Most of all, I particularly appreciated SmartCat's disk-labeling abilities. I use a non-Avery label paper in my

HP 500 InkJet, so many disk-label printing programs just shut me out. But, 15 minutes with a ruler on the paper stock and SmartCat's layout routines had me printing fashionable labels like I'd only dreamed about — my font choices, comments, everything I wanted! SmartCat can be downloaded from many BBSs, but if you can't find it there, it's available from the WinShare or PC World Forum(s) of CompuServe as SMTCAT.ZIP. The software is from Oakley Data Services, Sandbach, England, with a North American agent of Shareable Software International, PO Box 59102, Schaumburg, IL 60159. Tel: (708)-397-1221, Fax: (708)-397- 0381.

DISK FORMATTER

I plead guilty to re-cataloging many of my archives, thanks to SmartCat. But before I embarked on that task, I needed to prepare a lot of disks and I wanted a faster floppy disk formatter. Enter **Mr. Format**, which I found also in CompuServe's WinShare forum as MRFORM.ZIP, Version 1.1.

OK, so DOS has a format program. On my 486, with Teac drives, it takes 1:45 to format a 3.5-inch floppy disk. Using Mr. Format, from within Windows, I format raw disks at a rate of one per 1:10. That's a substantial time saving when you're trying to run through 100 disks in a hurry.

(This program is)
so fast, you need
to watch the
drive light to be
sure something
happened.

This is a sleek program with a well-designed interface aimed at doing only its assigned task — no scatterbrain

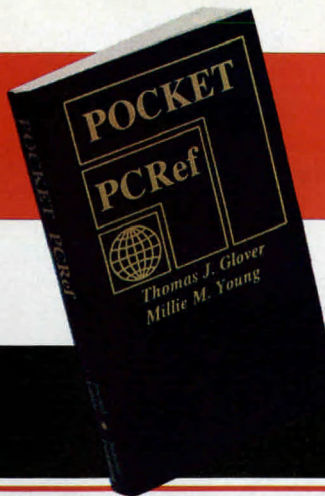
prompts, no redundant confirmations, no getting in your way. "I said 'format the disk. Do it!'", and Mr. Format spins forward. In fact, it CAN operate in the background; but it's so fast that you can't get much else done while watching to see when it's time to put in another disk. It has a "quick" mode, if you need only to blank the directory on an already-formatted disk: 7 seconds. So fast, you need to watch the drive light to be sure something happened.

Mr. Format has a registration fee of \$10, and is available directly from its author: Chris Adler, 1301 W. 1600 North, Orem, UT 84057.

WAVE PLAYER

Shareware author George Campbell is a prolific programmer, via his West Coast OsoSoft firm, turning out many Windows word-processing support utilities (most notably "FONTER", a TrueType font handler). But he writes freeware, as well, and the simple AutoWave utility he posted recently on CompuServe's PC World Forum (**GO PWOFORUM**) should be in every Win user's toolbox. It does nothing but play WAV files, simply and direct — mouse double-click on the filename from within File Manager or Norton Desktop, and the file instantly plays (assuming your system has sound output). No loading into a player, no additional poking at the "play" button, then closing a window and all that.

Written in Visual Basic, **AutoWave** requires VBRUN200.DLL, available from most BBSs. AutoWave is free, and may be distributed freely by BBSs. It is available online, or from OsoSoft, 1472 Sixth Street, Los Osos, CA 93402. Proof that big-'n-fancy is not always better.



Here it is!

The Biggest Little Book in the World

Pocket PCRef

"It's MY book - it stays on MY desk, and the rest of you guys keep your cotton pickin hands off of it."

That's how it started. The fight ended with a copy of Tom Glover's Pocket PCRef on EVERYBODY's desk at Boardwatch, but they still tended to "travel" a bit. So we decided to order a few CASES of them and offer them to our readers. Why did this little book cause such a stir? First, it has a very simple thing going for it. It's a little bitty book - pocket sized. We don't actually carry them around in our pocket, but it can sit on the desk without taking much space, you can drop it into a briefcase and again, it's almost not there. But authors Tom Glover and Millie Young have piled more tabular information on personal computers into this little book than anything like it we've found. It's the kind of information you only need once in awhile (couple times daily around here), but when you need it - you need it pretty badly - and preferably without a search through the lost ruins of Egypt in the back room. In 496 pages -

DOS Command reference - all of them through version 6.0 - some 200 pages.

DOS History - release dates, file sizes, the works.

PC Industry Phone Book - a little over 3500 telephone numbers of companies prominent in the personal computer industry. That gets thumbed a bit.

Hard Disk Configuration Data - ever lose your CMOS? You're hard disk disappears. All your data is there, and you can easily get it back, if you can just remember how many heads, how many cylinders, how many sectors per track, a little info on the landing zone, etc. Rub a lamp. This little book lists 2300 different drives with exactly the info you need to get back up in seconds.

- **Hayes AT modem command set - all of it.**
- **Keyboard scan codes - all of them.**
- **Port and Cable pinouts for parallel printers**
- **Hardware Interrupts and I/O maps.**
- **Software Interrupts**
- **ASCII/Decimal/Hex/EBCDIC**
- **PC Memory Map**
- **Address Maps**
- **Printer and Plotter control codes - HPGL, HP PCL5, Epson IQ860 - dozens of others.**
- **Error codes**
- **DMA Channels**
- **Video Scan Frequencies**
- **Pinouts for everything in your PC.**



Jack Rickard

Plus product support bulletin board lists and in this 3rd addition, we talked them into including the Boardwatch Magazine Reader's Choice top 100 Bulletin Board list. This isn't light reading, it's not a "how-to" book. It's a little (3.2 X 5.4 X 0.6) reference book with hundreds of little tables of information, phone numbers, and conversion tables. The kind of information you only need when you need it, and then you usually can't find it - or if you can, it's buried in some monster manual full of somebodies theory of how the computer industry ought to be. With this midget lookup book, you can quickly lookup the thing you need to know now. Send me \$15.95 - I'll send you one of your own. And yeah, I suppose you could carry it around in your pocket if you want.

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GRAPHICALLY SPEAKING

ROBOBOARD/FX — A BLUEPRINT FOR THE FUTURE OF THE BBS WORLD

By Jim Thompson
Western News Service

RoboBOARD/FX from Hamilton TeleGraphics, Inc. offers one of the most intelligent and efficient approaches to an on-line Graphical User Interface I have seen. It is certainly not perfect, but through its Bulletin Board System, User Terminal Program, and Drawing Program, RoboBOARD/FX combines some surprisingly sophisticated elements to create a completely graphical BBS which offers JPEG photo display, icons, dragging windows, pop-up dialogue boxes and scroller bars. The graphics are faster than ANSI and, in my opinion, superior to RIP or NAPLPS.

RoboBOARD/FX is a "real time" system which means that photographic images, graphics and icons are sent by the BBS to the caller's terminal when they are needed. This eliminates the need to download all this material before a session can begin.

According to Seth Hamilton, President and Chief Programmer for Hamilton TeleGraphics, Inc., RoboBOARD/FX utilizes Tel-FX, a register driven protocol.

"This means that variables are treated as if they were registers, just as in a CPU. You set them, then call a function which is then executed. For example, if you had set a color to an RGB value and then you wanted to draw a circle after just having drawn a line, the color would not have to be changed because the register is already set. The compiler takes all this into account. This means very short code and very small file sizes," notes Hamilton.

"One of the main differences between our protocol and others is that it is not only a presentation protocol but also a GUI or interface protocol which is completely object oriented as well," says Hamilton. The result is a protocol that is both more robust and more advanced than that utilized under RIP or NAPLPS.

Tel-FX is not a text board add-on, but a full graphics protocol. By contrast, RIP or NAPLPS send their codes in one direction. Either could be replaced by an ANSI screen and transferred, providing the terminal program understands the codes, the screen would be displayed.

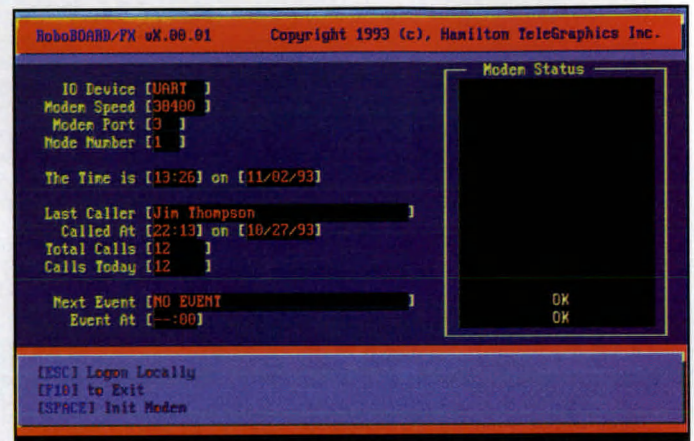
Tel-FX takes a different approach. It is a two-way protocol which requires much more interaction and integration between the server and the client. There is a much closer link between the two. The server sends commands which are responded to by the client. However, when the client needs to respond to the host, it will actually send an alias forcing a reaction or response. As Seth Hamilton puts it, "Tel-FX is both more complex and more intelligent than the other protocols."

As noted, RoboBOARD/FX offers a full approach to an on-line, real-time, Graphical User Interface. There are three basic elements to the package — RoboBoard/FX (the BBS

itself), FX-Draw (the drawing program used to create menus, graphics, icons, etc.), and FX-Term (the user terminal program).

THE ROBOBOARD/FX BBS

Even at the first look, it is clear that this is a well thought-out program. The documentation is clearly written, well organized and contains everything needed to get started, even if one is new to bulletin board systems. It is a bit light on the more technical end of things, but TeleGraphics offers excellent support and it appears that they are both willing and able to supply any technical information needed.



I was also impressed with the fact that although this is a complex program, the entire two-line version, thanks to compression, ships on one 3.5-inch diskette.

The installation is simple and easy. A directory tree structure for the BBS is drawn on the screen and the name of each file appears as it is decompressed and copied to the hard disk.

While the installation diskette is small, the program itself does require both power and space to operate properly.

To install the package you will need at least a 386SX machine (a 486 is recommended), a VGA graphics adapter (SVGA is recommended), and approximately one megabyte of memory per line.

RoboBOARD/FX has direct support of ATI, Paradise, Trident, Tseng 3000/4000 and Video Seven graphics adapters. There is also support for VESA drivers. Four graphics modes are supported: 640x480/16, 640x480/256, 800x600/256 and 1024x768/256.

The BBS can be run as a single node system or as a multinode system in either graphics or text mode. You can choose between a 2, 4, 8 or 255 line version. Three methods of multi-line operation are available: LAN, DesqVIEW or DesqVIEW-LAN.

The two-line version requires approximately six megabytes of disk space for installation. An additional two

megabytes of free hard disk space is needed for temporary file swapping. There is also full support for CD-ROM but you will need an additional 12 megabytes of hard disk space for a single node. This amount of space is needed since users can mark up to 10 files for download. The marked files must be temporarily paged to the hard drive for downloading. Of course, multinode systems will require more space.

A 50 or 66 megahertz 486 with 8 megabytes of RAM is required for the 8 line version running under DesqVIEW. You can run up to 8 lines on a single PC. If you require more lines, you will need more machines.

RoboBOARD/FX supports three I/O modes: UART, Fossil and DigiBoard. Also, graphics performance will be greatly enhanced with a math coprocessor.

This is definitely not a system that you can install on that old PC you have gathering dust in the storage room. It needs both power and space to run properly.

This is version 1.0 of RoboBOARD/FX and we all know what is said about buying into the first version of any software product. However, I found it to be surprisingly complete and stable. The graphics and photographs are handled cleanly and the overall performance is excellent.

There are some drawbacks, however. The Sysop status screen is adequate, but provides only minimal information. I suspect most Sysops will be frustrated at the lack of status information. Also, there is no quick Sysop logon. If you want to logon from

the local console, you will need to go through the same steps as the caller. This means entering your name and password and looking at all the graphics and menus as they are drawn.

There is also a limit to the number of message areas and the length of messages. Many will find this constraining. The present version allows for only 200 message areas with a combined total of 16 megabytes of messages. Individual messages are limited to 80 lines.

The message area allows callers to write new messages, reply to received messages, delete a message, upload a prepare message, download a message or send the text of a message to the printer. There is also built-in support for FidoNet Echomail.

Hamilton tells me that the plans for the next version include increasing the allowable size of a message to 120 or 160 lines, unlimited number of message bases, the ability to attach files with messages, support for Internet and Usenet mail and FidoNet net mail.

The new version will reportedly also address a number of other shortcomings. Among the plans are the addition of a sophisticated database, the expansion of the file area to support multi-line descriptions and password protected files.

The new version "will be in testing sometime in December, 1993," Hamilton said. When asked when it will be available, he says simply and honestly, "When it works." From what I have seen, that will probably not take very long. Seth has written some very impressive code to get the product to

this stage. It was written using object code which means the way the program functions or looks can be changed relatively easily.

RoboBOARD/FX allows for up to 999 Forums and has full support for DOORs. There is also support for multinode chat and for Sysop-to-User private chat. The chat feature is excellent. In private mode a split screen window pops up. In multinode chat, one is presented with a large chat window with a typing area along the bottom of the screen. Quick access buttons and scroll bars make this one of the best features of the system.

Another impressive feature is the ability to transmit photographic images in the JPEG format (see BoardWatch, September, 1993 for a full discussion of the JPEG standard). The photo images are displayed within a frame to the caller. Using the included drawing program, you can add graphics or text to the frame area at the top or bottom of the image. There is no way to add this material directly to the image.

The photographic images are sent via Zmodem to the caller's terminal. A nice graphic display showing the estimated download time, the elapsed download time, the name of the file and a thermometer download status indicator. Once received, the terminal program decompresses the JPEG and displays it in a frame.

All of this works very smoothly, but makes one beg for more. Among the drawbacks is that the displayed image cannot be re-sized. In order to limit the download time, the size of the image has to be kept to a minimum. A full-screen image would take much longer to download and display than a smaller image. So, if multiple size images are required, multiple files are needed — one for each size that is to be displayed.

Another problem is that only one image can be displayed on the screen at a time. This makes comparing images very difficult. Also, the images cannot be viewed when off-line.

Yet another drawback is that the images cannot be tied to a database or directly to text files. This makes creating a sales catalogue, real estate listing or news item which refers to a photo

very difficult to create. It can be done, but not without causing some problems for the caller.

FXDRAW

This is the real heart of the program and the portion that gives it its soul. **FXdraw** is a 256-color drawing, painting and graphics assembly package. This is where you create custom menus, icons and integrate photographic images.

FXdraw is a polygon based editor as opposed to flood-fill based, as is found in other graphics packages.

"Since it is polygon base, we can define mathematically bounded regions that are opaque. this means that if you scale in a color which is not exact — say you are going from 24-bit to 256-color or 16-color and you need the next available match, when you fill the polygon with it — it will look more like the original than would a flood-fill system," Hamilton says.



do scaling as well as to have color depth independence, making us nearly device independent," he adds.

program was used to create the screens and menus found in RoboBOARD/FX, which is a testament to its flexibility and power.

The program is an "animation mode" package, which means that instead of drawing or displaying a graphic from top-to-bottom as is typically done with ANSI screens, the graphic is displayed in the same order in which it was drawn. This allows for the creation of simple animation by displaying things in a certain order or by overlapping icons and patterns.

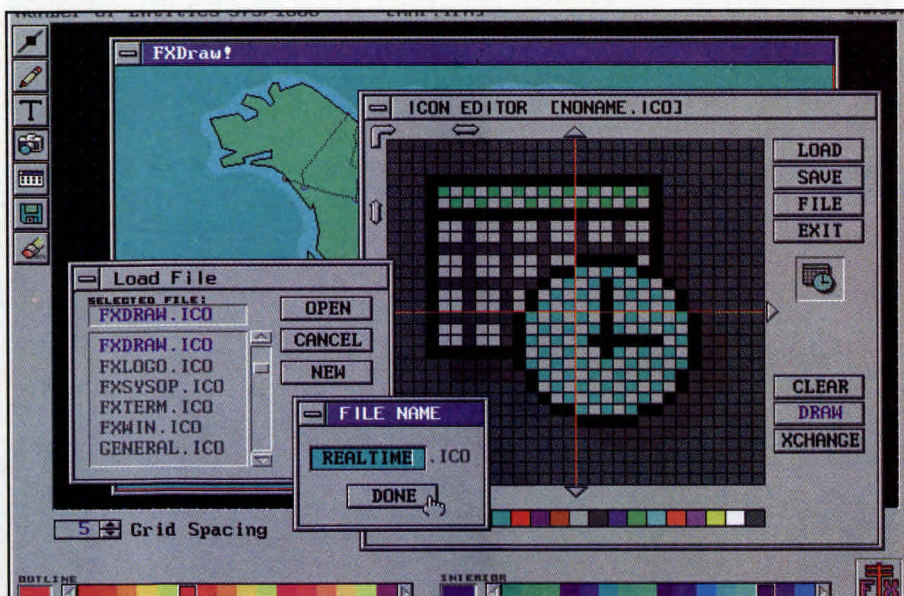
Of course, you must have some artistic ability to create an attractive picture or menu. But assuming you have at least a minimum of talent when it comes to drawing, you will find this package relatively painless to use.

An icon editor (30x30) is built into FXdraw which allows icons to be created, copied, moved, mirrored, rotated, shifted or file merged. After creating an icon, it can be assigned to a button. Three types of buttons are available: an Embossed Button (raised surface which flattens when it is pressed), a Flush Button (this is flat and indents when pressed), and a Ghost Button (this is actually not even seen by the user). The Ghost Button is actually not a button at all, but a HOT area on the screen which allows for a menu system when actions are taken by clicking on icons or text without buttons.



"For example, you may have a picture with 40-shades of green in it and want to scale it down to 16-colors, which has only 2 shades of green. In this case, you would find that the flood-fill systems would be unable to fill because they would be rounded to one of the two shades available. Polygons, because of their opaqueness, will actually fill all 40 of the polygons with the nearest match. This allows us to

Compared to a drawing program like **RIPaint**, FXdraw is very easy to use. Instead of using a raster-based, flood-fill system, the polygon based FXdraw is more like what you find in programs like Corel Draw. The mouse-driven interface, intuitive icons, flyout sidebar menus and dragging dialogue boxes make this program a pleasure to use and simple to learn. This same

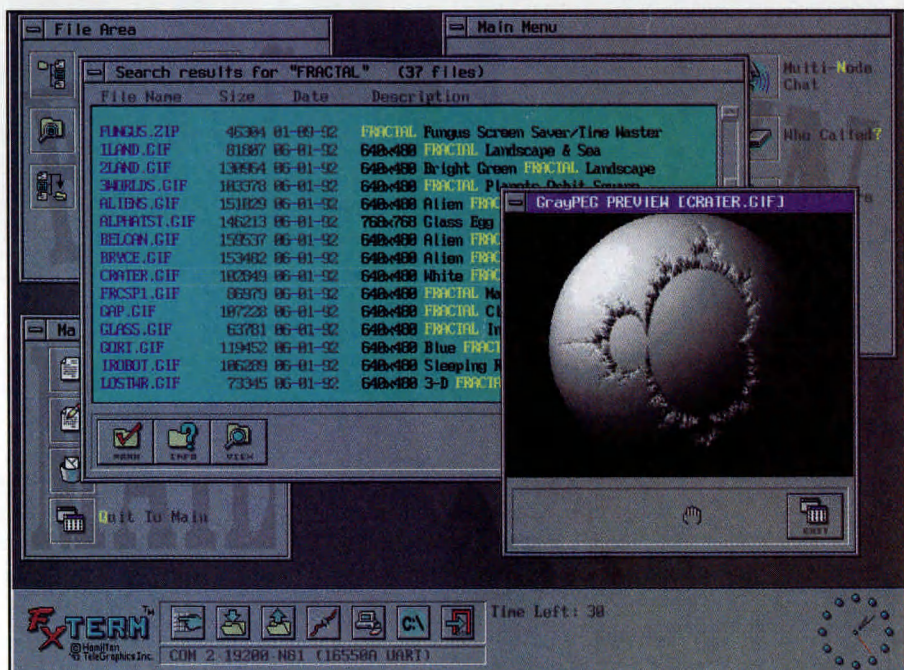


When transmitted, the icons are compressed in realtime and decompressed on the caller's end — also in realtime. Compression ranges anywhere from 5% to 95%, but generally is at about the 75% level. Also, the terminal package (FXterm) checks to see if a requested icon already exists on the caller's system. If it does exist, the host is notified, preventing the icon from being sent a second time. Icons are stored in libraries and named by their CRC value so there is no need to worry about figuring out names. All of this makes the use of icons very efficient.

Creating a menu is a relatively simple process. First you would draw your picture (that is assuming you want to have a picture within or as a

background for your menu). The next step would be to create the needed icons (you can also select from several dozen icons that come with the package. These can be used "as is" or edited to suit your needs). These icons will later be described on the menu with one of the available commands.

The next step is to add the appropriate button to the icon and assign a key which will be activated when the button is "pressed." This same key would perform the same function if pressed on the keyboard, providing compatibility in ANSI and ASCII modes. All that is left is to add the menu to RoboBOARD/FX.



FXTERM

FXterm is the program that allows callers to interact with RoboBOARD/FX. Registered users of RoboBOARD/FX are allowed to distribute this program at no charge.

The present version of FXterm offers basic communication abilities. After loading the program, the user is presented with a row of icons along the bottom of the screen which allow for: dialing via a dialing directory, the upload and download of files via Zmodem protocol, disconnect, the altering of communications settings, shelling to DOS and exit. It supports Tel-FX Graphics Mode, color ANSI and mono ANSI.

Required to run the program are a VGA adapter, 500k of memory and about two-megabytes of hard drive space. The VGA adapter must be an ATI, Paradise, Trident, Tseng 3000/4000 or Video Seven card. Any VESA driver will also work.

The program works smoothly. I found no problems using it when connected to a RoboBOARD system or to any other BBS. It does the job but may leave many wanting more.

There is no capture facility which means that even something as basic as saving a message is not possible. There is also not even a rudimentary script language. If you are calling a RoboBOARD/FX system, you can have your name and password entered automatically, but there are no facilities for entering this information if you call any other system. Since this is a DOS program, it becomes very inconvenient when you have to have a separate program for every system you call. The restriction to Zmodem protocol only compounds the problem. I know many do not want to admit it, but there are boards that do not have Zmodem.

Another thing that bothered me is the slow scrolling of text displays. Text material is displayed in a window with scroll bars along the side. The first screen-full of material displays quickly, after that the text lumbers painfully along one line at a time. All of it does reach the caller, but not without some frustration.

Another drawback is that only a DOS version of FXterm is available.



There is no Windows or Macintosh version. This eliminates a significant segment of the on-line community from having access to the many features of the RoboBOARD/FX system.

Hamilton says that a future release of the program will address many of these shortcomings. According to him, a new release (which will likely be available by the time this article is published) will allow the program to run in less memory. Presently, FXterm requires 500k of memory.

"We are planning a series of terminal program updates that will eliminate line noise, add a full client-server protocol which will allow for background transfers, more protocols, and a scroll-back buffer in ANSI mode," Hamilton says. Also in the planning stages for the terminal program are "permanent JPEGs" which will allow for one to view the JPEG images after disconnecting from the host. Support for Sound Blaster cards is reportedly also in the works.

CONCLUSIONS

RoboBOARD/FX is an excellent program that has every promise of getting even better. It is definitely one to watch for the future. The graphics ability it provides are already far ahead of that offered by RIP or NAPLPS. Hamilton says they are considering making their Tel-FX protocol available to other BBS software providers. If this happens, I can see this protocol quickly becoming a standard.

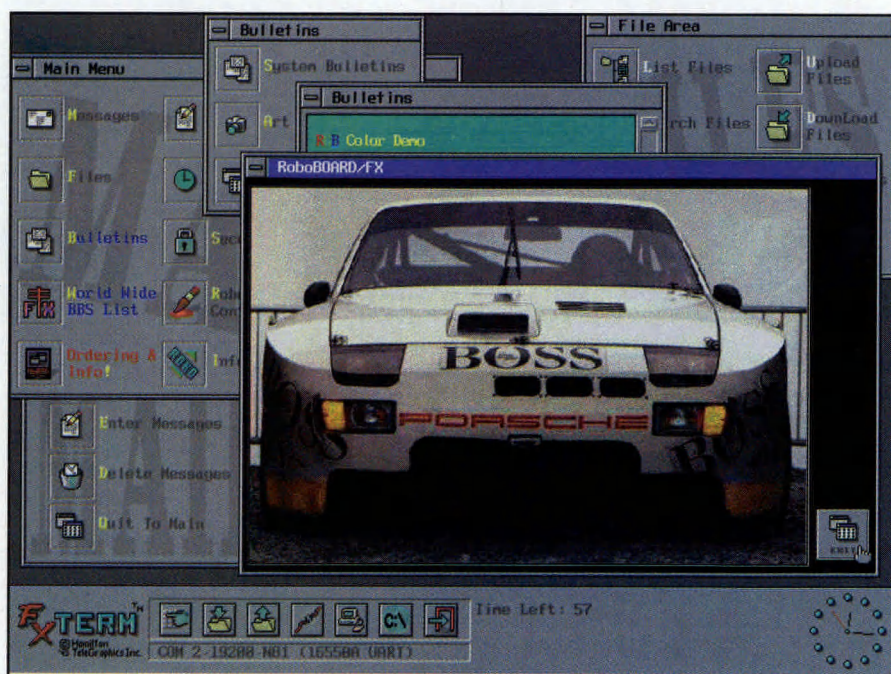
Overall, the program does need a little more time to mature. The BBS itself (RoboBOARD/FX) needs many more features if it is to be a serious contender in the "Great BBS Wars." The terminal program (FXterm) also needs a re-vamping if the program is to take a place among the BBS leaders.

The power and amount of hardware needed to set up a multi-line system, may also be a drawback to some, but that is what appears to be the future for graphics-based systems. Graphics and high-quality images require processing power and there seems to be no getting around it.

Just look at the evolution of the lowly word processor. It wasn't long ago that no one would even consider using a word processor if it did not fit on a single low density diskette and run entirely in memory. Nowadays, a program like Microsoft Word requires 10 to 12 megabytes of disk space and won't be happy unless it has a 386 processor and 8-megabytes of RAM. As BBSs become more sophisticated, they will follow the same path to the need for more power.

The photo display abilities of RoboBOARD/FX are adequate, but not revolutionary. You can display a JPEG image, but you are limited to one at a time. Presently, there is no ability for the off-line viewing of images or for viewing multiple images at the same time. Also, one cannot resize the images. The only way to offer varying sizes of images is to have several versions of the same image available. This means lots of extra files and lots of extra disk space. Still, if single images are all you need, the package may be perfect for you. The JPEG image display does work well.

Knowing the dedication of Hamilton and his brother Gary, I have every confidence that this program can become a leader in taking the BBS world into the future. It is the first system I have seen that addresses the need for a complete blueprint for an on-line system that will incorporate a Graphic User Interface (GUI), photographs, high quality graphics and



sound. RoboBOARD/FX is definitely one to watch.

(Jim Thompson is Managing Editor of Western News Service in Los Angeles, California. He also manages the Marlboro Racing News BBS. CompuServe: 72777,2677, MCI Mail: 321-4127, Internet: newsdesk@cerf.net)

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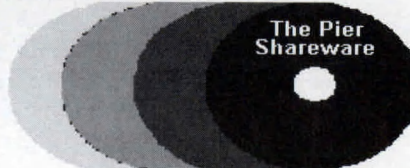
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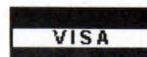
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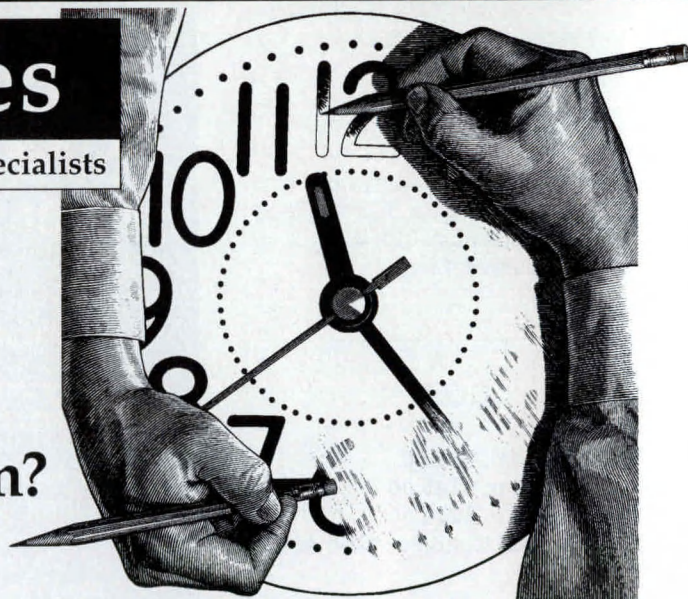
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GW Associates was formed several years ago to promote and support the growing need for Information Management systems (BBS). Our goal has always been to make communications easier. We've always had the opinion that many seem to work very hard to make "telecommunications" some kind of mystery, a gray area where common man should never wander. And it really can be made simple. We'll be happy to show you how!

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Our ONLY business is telecommunications. We install commercial information management systems, we install telecommunications networks linking offices across the country using personal computers and inexpensive automated software. And we sell everything from single line TBBS software to 64 line "plug and play" packages.

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We remotely maintain commercial BBS systems. It's a good bet that you have never hired an employee to be a System Operator. And any time that an employee spends in the design and maintenance of a system is taking time away from the work that employee was hired to do! What happens when the employee is promoted, transfers or resigns? Can you afford to hire and train, or take another employee away from assigned tasks? We can support your TBBS system remotely at what might be a lower cost than what you will pay for an employee benefits package, and we won't demand paid vacations or coffee breaks.

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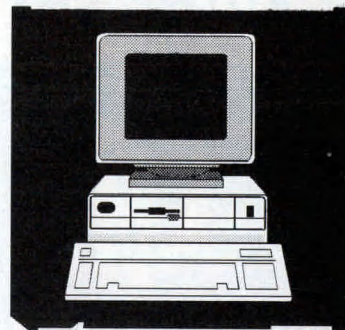
We have been building a matrix of associates around the world with the capability of installing and maintaining private and commercial TBBS/TDBS Bulletin Board Systems and that matrix is in place to help you in any way we can. If you would like someone to visit your site to do a full needs assessment or to help you with an existing TBBS/TDBS installation we will be happy to place you in contact with one of our associates nearby. And as all our associates work together as a team you can take advantage of their many years of accumulated experience with TBBS systems.

Call Today For More Information

If there's anything we can do to help you make better use of any communications tool, please ask. If you're not sure if you really have a need for a system and want to know more, please ask. We're here to help in any way we can. We hope you'll give us the opportunity to help. If you need information on prices or just need information on communications, don't hesitate to ask for help. We enjoy what we do and we'll enjoy discussing your applications and needs.

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TBBS / TDBS SYSTEM ENHANCEMENT SOFTWARE

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SystemMaster

SystemMaster allows COMPLETE and easy control of any TBBS/TDBS system. It features the ability to store and launch any TBBS command from a database of individual commands or from Program Groups which allow sequential execution of specific commands that YOU group together. You can even sort the commands or time their execution speed. It has Context sensitive help which automatically pops-up in a window whenever you add or edit a TBBS command, it provides a complete suite of easy to use SYSOM and DOS commands and facilities far beyond what you've ever seen before in a TBBS/TDBS, it provides a COMPLETE TDBS control area which allows you to create, modify, pack, zap, search and edit any TDBS database and index file, and much much more!

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We're not sure if they are truly educational or just great fun but we have several new games by Ken Cox and John Rice that certainly make users think! Ken's latest is Classic Hits, with over 2200 song title and rock music questions. And John's Colossal Cliches has a database of over 500 cliches, old and new, with an editor so you can add your own! We have games that make your users think! And there are dozens of other games and entertainment software available, priced from \$29.95 to \$169.95.

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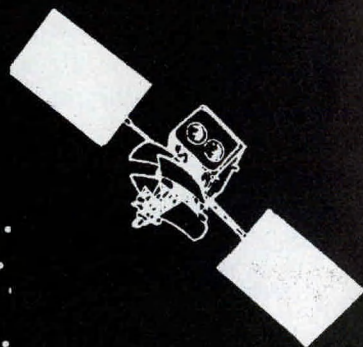
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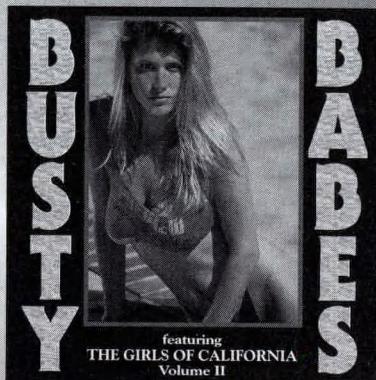
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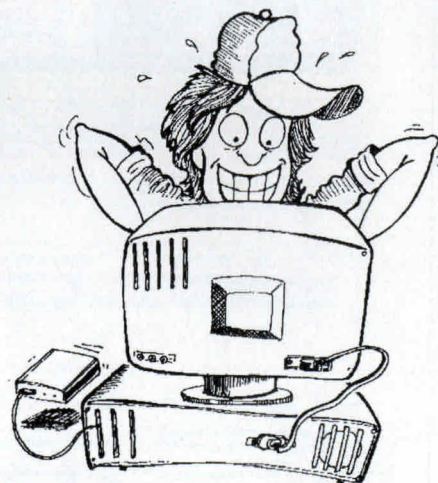
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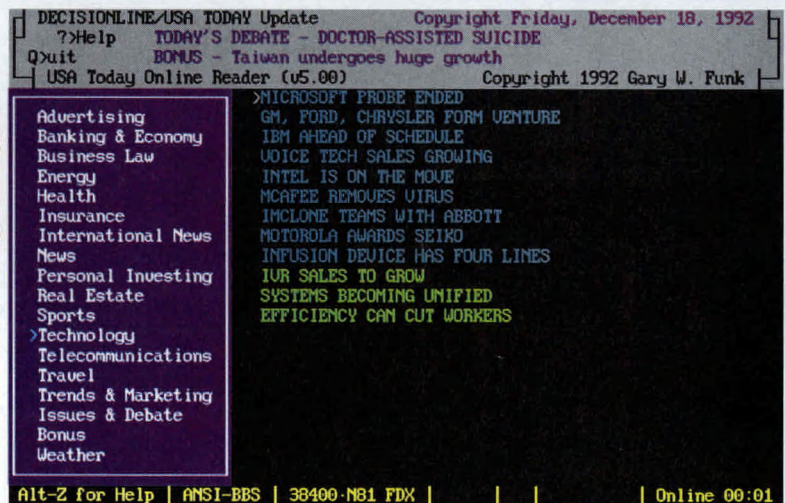
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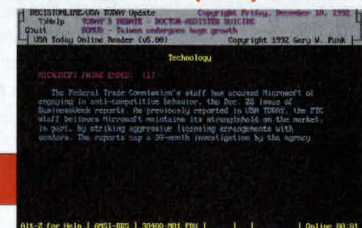
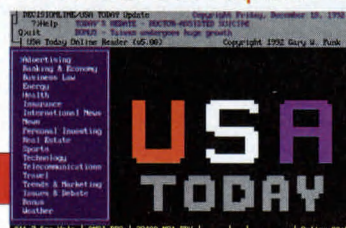


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New User Information

All first time callers receive by mail, our printed 'New User Information' and 'E-Mail Conference Directory' guide, as well as a 'Quick Command Guide' to help you get the most out of Aquila. The new user information covers system services such as answers to commonly asked questions, USA Today, Boardwatch Magazine, and Electronic Mail off-line readers. The 'Quick Command Guide' is a desktop lookup for using Aquila commands.

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FirstClass	SoftArc, Inc.	416-299-4723	416-754-1856	416-609-2250	MAC
Hermes II	Computer Classifieds	206-643-2316	206-643-7830	206-643-2874	MAC
Novalink Professional	ResNova Software Inc	714-379-9000	714-379-9014	714-379-9004	MAC
Second Sight Soft	Scott Watson, FreeSoft	412-846-2700	None	412-846-5312	MAC
Telefinder	Spider Island Software	714-669-9260	714-669-1383	714-730-5785	MAC
hi-BBS	XBR Communication	514-489-1001	514-489-4966	514-489-0445	MAC
OS/2					
Magnum BBS	Gilmore Systems	805-379-3210	805-379-1340	805-379-3450	OS/2
Multi-Net	Multi-Net Comm	503-883-8099	503-883-7879	503-883-8197	OS/2
UNIX					
CocoNet	Coconut Computing, Inc	619-456-2002	None	619-456-0815	UNIX
TEAMate	MMB Development Corp.	310-318-1322	310-318-2162	310-318-5302	UNIX
Z/Max XChange	Z/Max Computer Solutions	315-635-1882	315-635-1908	None	UNIX

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TELE LINES		MULTI	LAN	MAIL				CHAT	PRICE	
LAN	PC			TASKER	LOGONS	FIDO	INTERNET		QWK	OTHER

Amiga

Unlim	29	OS	NO	INT	3RD	3RD	NO	YES	\$299	\$299
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Apple

1	1	NONE	YES	NO	INT	NO	NO	NO	\$159.95	
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MS-DOS

-	32	INT	NO	NO	NO	NO	NO	YES	\$995	\$395
256	256	DV	YES	3RD	OPT	OPT	YES	YES	\$10,717	\$259
10	8	DV	YES	3RD	3RD	3RD	NO	YES	\$49	\$49
255	1	DV	NO	INT	3RD	3RD	NO	YES	Free	Free
1000	16	DV	YES	3RD	3RD	INT	NO	YES	\$680	\$170
999	8	DV	YES	INT	3RD	INT	NO	YES	\$2300	\$99
255	8	DV	YES	INT	NO	INT		YES	\$49	\$49
9	4	DV	YES	OPT	NO	3RD	NO	YES	\$175	\$75
250	1	DV	YES	3RD	NO	3RD	NO	YES	\$529	\$149
255	8	DV	YES	3RD	NO	NO	NO	YES	\$400	\$95
255	1	DV	YES	3RD	3RD	INT	NO	YES	\$85	\$85
1	1	NONE	NO	NO	NO	NO	NO	YES	\$45	\$45
Unlim	10	DV	YES	INT	3RD	3RD	3RD	YES	\$399	\$99
250	8	DV	YES	3RD	3RD	INT	NO	YES	\$399	\$99
-	64	INT	NO	OPT	3RD	OPT	NO	YES	\$1995	\$295
1	1	DV	NO	NO	NO	NO	NO	YES	\$25	\$25
1024	16	DV	YES	INT	3RD	INT	INT	YES	\$999	\$99
999	8	DV	YES	3RD	3RD	3RD	NO	YES	\$320	\$80
250	8	DV	YES	3RD	OPT	INT	MSI	YES	\$799	\$129
999	?	OS	YES	3RD	3RD	NO	NO	YES	\$195	\$195

Macintosh

-	22	OS	YES	3RD	OPT	NO	INT	YES	\$3450	\$95
10	10	OS	YES	3RD	3RD	NO	NO	YES	\$95	\$95
Unlim	40	OS	YES	3RD	INT	NO	NO	YES	?	\$300
2	2	OS	YES	3RD	NO	NO	NO	NO	?	\$199
200	20	OS	YES	3RD	3RD	NO	NO	YES	\$2,000	\$425
130	?	OS	YES	NO	OPT	NO	NO	YES	\$3,400	\$175

OS/2

64	?	OS	YES	NO	NO	INT	NO	YES	\$900	\$75
999	12	OS	YES	NO	NO	INT	NO	YES	\$895	\$195

UNIX

1000	?	OS	YES	NO	INT	NO	NO	YES	\$18,995	\$395
Unlim	?	OS	YES	NO	OPT	OPT	NO	YES	\$2,000	\$2000
Unlim	?	OS	YES	NO	INT	NO	NO	YES	?	\$695

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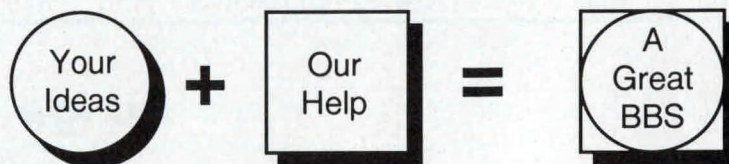
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LEGALLY ONLINE

AT THE CORNER OF WALL STREET AND INFORMATION SUPERHIGHWAY

by Lance Rose



The latest wave of computer network explorers is the investors, trailing truckloads of money. Leading the charge are Bell Atlantic, the enormous telephone company, and Tele-Communications Inc., the enormous cable television company, whose October announcement of a \$35 billion merger riveted the attention of the press, not to mention most of the business and financial world. Along the way the Internet was unofficially declared the living precursor to the "Information Superhighway" promoted by the Clinton administration.

Scarcely a day goes by now without a major story on telecommunications or the Internet in the daily newspapers. The press is also announcing new goals for our communications networks: a grand merger of the computer, telecommunications, entertainment, and publishing industries; 500 channels of "interactive television" for your viewing pleasure; fiber optic cables to everyone's home; and a little box on top of the TV to make the whole thing go in each household. Much of it is compelling, though claims that "digital convergence" means all the action will revolve around the little box perched atop the TV putting new meaning in the term "idiot box."

The public's fascination with the Internet is beginning to overload its circuitry. A recent installment of the New York Times' running commentary on net developments featured an article on "data jams" on the Internet. There's a new gold rush on. People plumbing the net for free information are simply clogging it up. One net site that announced a hacker break-in was rewarded with a dense crowd of people who had never entered the system before, stopping by to see what all the fuss was about. Another net site is pondering whether to take a research supercomputer away from their

scientists and press it into the more pedestrian, but more needed, role of net server. These traffic problems are an illustration, hyperbolic but quite real, of the raging increase in the popularity of computer networks.

Another point emerges later in the same article: one man's data jam is another's opportunity. With the demands for net data steadily increasing, surely there must be some willing to part with some money to get at the information they want without waiting in line. Some net providers quoted in the article state their clear intent to explore just such profit-making opportunities. The effort, by and large, is to take resources previously public on the net into private areas and charge a toll for access. This may be repugnant to some, but it can gladly help solve one old problem. We won't have to hear any more from those people who habitually argue Internet access is never "free". We'll all be paying someone, so the blissful illusion of a predominantly publicly funded net can finally die in its sleep.

This should sound like a familiar process. It's just another turn of the big wheel of hype, this time starring the Internet as put into play by our government and our largest corporations. The increasing capabilities of the Internet bred corporate interest, corporate interest bred media coverage, media coverage gets more people involved in the Internet, and the Internet grows ever faster, spurring far more ambitious efforts to exploit its rich potential. The process is fully underway and completely irreversible. The old leaders of the online world, the technical gurus and the wayward hackers, just have to shove over to make elbow room for the tollkeepers of the data gateways, the show biz promoters, and various hard-hitting, rock-jawed, profit-maximizing business men and women. "Commercial use" of the Internet once referred to the filthy habits of shoddy merchants, easily isolated and disdained by net gurus and technocrats. Now it is the shining altar at which many of our best-dressed new net arrivals worship. Offline society is changing as well. As Newsweek put it back in May, 1993, "The interactive future has started to arrive, heralded (as it always is) by an unmistakable sound: that of money hitting the table. . . . When that happens, the face of the American commercial landscape changes irrevocably."

Wall Street itself is part of that landscape, and fully subject to the growing power of the computer networks, including the emerging ability of online communications to exercise direct power over the investment markets. In the past year, two different publicly traded companies filed lawsuits claiming their stock prices went down due to badmouthing in Prodigy's "Money Talk" public discussion area. The first was Medphone Corporation vs. Peter Denigris (Case No. 92-3785 (HLS), filed September, 1992 in the Federal District Court for New Jersey. Medphone, a maker of high tech medical equipment that enables doctors to help heart attack victims from remote locations using cellular technology, had been a company with a lot of potential. However, as many start-ups do, they stumbled on the way to success, so badly that their continued existence was in doubt. Mr. Denigris, a disgruntled investor, said that Medphone's executives were planning public offerings just so they could unload their stock on the public, and that Medphone's activities were being investigated by the American Stock Exchange.

It claims he operates a stock brokerage, and that his statements were made deliberately to send stock prices down...

Mr. Denigris was sued for these statements, and the case is still in progress. He says free speech is at stake, not only his own, but also that of the other Prodigy users who might now shy away from candid discussions on Money Talk from fear of lawsuits. Medphone's position is simple: they claim that Mr. Denigris libeled them by making certain false factual statements in a public forum with widespread public effect, and it caused their stock price to go down. If Medphone's claims turn out to be true, then the free speech

argument loses much of its force. Libel claims are still very much alive in our American court system, especially where, as here, there is a good chance of showing that Mr. Denigris bore ill-will toward Medphone at the time he made his comments.

On the other hand, this suit may be no more than a way for Medphone to divert attention away from other, more substantial reasons for the fall in its stock prices. Since Mr. Denigris was being nasty toward Medphone in public anyway, it could scapegoat him for the company's problems and possibly not even feel pangs of conscience over it. In any event, assuming Medphone can prove Mr. Denigris' assertions were in fact false, it would still need to show that his statements on Prodigy had any real effect on its stock prices.

This is not a minor task. When first looking into the Medphone case a few months back, I talked with financial analyst Mark Stahlman of New Media Associates in New York City. In his view at the time, a single person with no particular reputation for having information important to the investment market could not directly affect stock prices just by posting a few messages online. He added, however, that enterprising brokers that maintain short positions on stocks, and can make money by propagating negative rumors about companies like Medphone, could take public statements like those by Denigris and amplify them enough so that they do actually affect stock prices. If this was the case, then even if Denigris' negative postings planted a seed that led to falling stock prices for Medphone, he might not have been directly enough involved in the brokers' subsequent spread of negative information that he can be held responsible under the law.

That particular defense might not be available in the other, more recent case, Epitope, Inc. v. A. Karl Kipke (Civil No. 93-1212-MA) filed September, 1993 in the Federal District Court for Oregon. If the claims of Epitope are valid, then the defendant Kipke is a perfect example of the enterprising broker described above. Epitope is another high tech medical company, that develops and markets AIDS diagnostic products. Like Medphone, Epitope's publicly traded stock took a plunge, and it blamed a guy who said bad things about the company on Prodigy's Money Talk. Kipke's sup-

posed falsehoods included statements that a New Jersey dentist illegally promoted Epitope's stock to the public; that the FDA was taking certain negative actions against Epitope; and that one of the principals of Epitope was unloading his personal stock holdings. Kipke, however, is described by Epitope as a far different creature from Denigris. It claims he operates a stock brokerage, and that his statements were made deliberately to send stock prices down, benefiting both himself and his customers that he allegedly maintained in short positions on Epitope stock.

Unlike Medphone, which is proceeding against Denigris primarily on a libel claim, Epitope has added strong allegations of market manipulation and securities fraud under the Securities Exchange Act. If the allegations of short positions are borne out, Kipke could have a hard time escaping the wrath of the court. There is also room for speculation, as in Medphone, that Epitope is just trying to scapegoat Kipke for stock price failures actually due to other causes it does not care to discuss. All we can do right now is conjecture, but a particularly telling clue is the wording of the key allegation that Kipke maintained short positions on Epitope stock. Epitope does not claim to know this, but makes the allegation on "information and belief." This piece of lawyer-speak means Epitope believes what it says about the short positions, and hopes to obtain solid proof that it really is true during pretrial discovery. In other words, Epitope may indeed have a damning claim against Kipke as a craven stock manipulator, or it may just be wasting time and money to find out if Kipke actually was half as bad as they claim.

Sysops should find it interesting that in neither case was Prodigy named as a defendant, even though the problem activities in both cases took place in a Prodigy discussion area. This is, of course, exactly how sysops would like to see these situations turn out. If someone has a problem with a BBS user, then take it up with the user, and leave the sysop out of it altogether. The problem is that we can't be sure of exactly why Prodigy wasn't named. After all, Prodigy certainly has a lot more money to pay off a court judgment than the individual defendants, and for that reason alone we should expect to see it in such cases.

Perhaps Prodigy was not named because in each case, the plaintiff recognized Prodigy's First Amendment rights as an online distributor of speech. This would bode well for sysops, who can assert the same rights. Or perhaps, Prodigy was not named because the plaintiffs were unwilling to take on Prodigy's immense legal capabilities, especially at a time when their stock prices were low and they had to be careful in their spending. If this was the primary reason, then smaller sysops would be at greater risk of being named as extra defendants in such lawsuits, though hopefully they could get dismissed early upon asserting their First Amendment rights, as CompuServe did when it was sued for defamation by a third party newsletter on its system.

Both the Medphone lawsuit and the Epitope lawsuit are testimony to the growth of power of online communications over the years. For years, people and companies threatened each other with lawsuits over supposed slander and libels online, yet the lawsuits almost never materialized. Two schools of thought developed on the net on the reasons behind this. One holds that since online communications are so readily available, those injured by others' false statements can usually right the wrong themselves by going out on the same online channels with their own version of the facts. Under this theory, we may never see much libel litigation related to online communications. The other school of thought is that there simply has not been enough money involved in online disputes to justify the considerable expense of taking the fight to court. Under this theory, as more money moves into the online world, and as online statements affect financial activities on a larger and larger scale, we should see a steady rise in litigation of all sorts related to online activities, including online libel. I subscribe strongly to the latter theory, and I believe Medphone and Epitope, and the CompuServe v. Cubby case before them are just the forerunners of a future wave of cases involving claims of great financial losses due to online libel.

What if Medphone's and Epitope's allegations are all true, and individuals have gained a disproportionate power to affect stock prices just by being loudmouths in online places like Prodigy? Hopefully, the markets should adjust as they have in the past.

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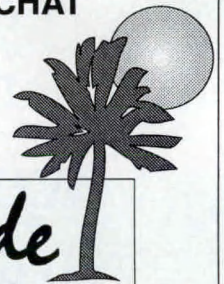
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Investors should eventually factor into their understanding of market activities the knowledge that rumors can be started by nobodies on computer networks, and perhaps will discount rumors more greatly than in the past unless accompanied by some additional evidence of reliability. Over time, investment and trading markets should develop appropriate and measured responses to rumors emanating from BBS'.

One thing is clear. For the foreseeable future, computer networks will be the focus of many of the world's investors, large and small.

Lance Rose is an attorney practicing high-tech and information law in Montclair, NJ. He can be found on the Internet at elrose@path.net, and on CompuServe at 72230,2044. He is also author of **SysLaw**, the legal guide for online service providers, available from PC Information Group at 800-321-8285.
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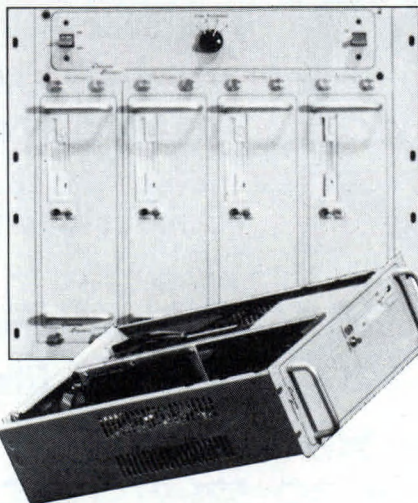
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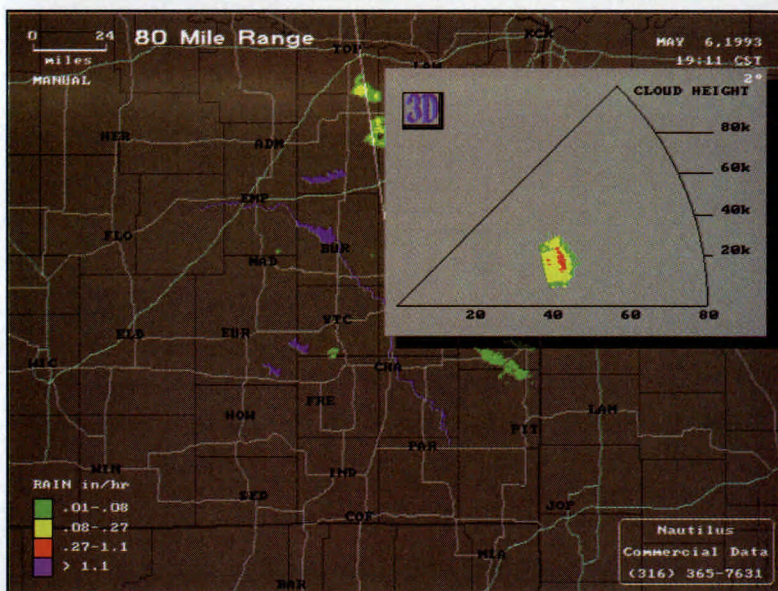
Nautilus Commercial Data is a reasonably plain system in IOLA Kansas. But it does have several interesting elements. For one thing, although the service uses TBBS software, they sport 200 incoming telephone lines. And two, it's not a particularly chatty service - they focus primarily on offering businesses in the area BBS services and maintenance on their own system.

But they do also offer information - most notably weather. While there is nothing new about weather, this is very regional weather, typically within a 240 mile range, and very current. GIF images of current weather conditions are updated every five minutes on the service.

The system is based on a private weather radar system that scans the area hourly. It's based on Digital Radar technology with a 30-inch phased array antenna system. Once precipitation is detected, the service kicks into high gear with updated weather maps every five minutes. In this "Tornado alley", few are interested in where the tornado WAS an hour ago.

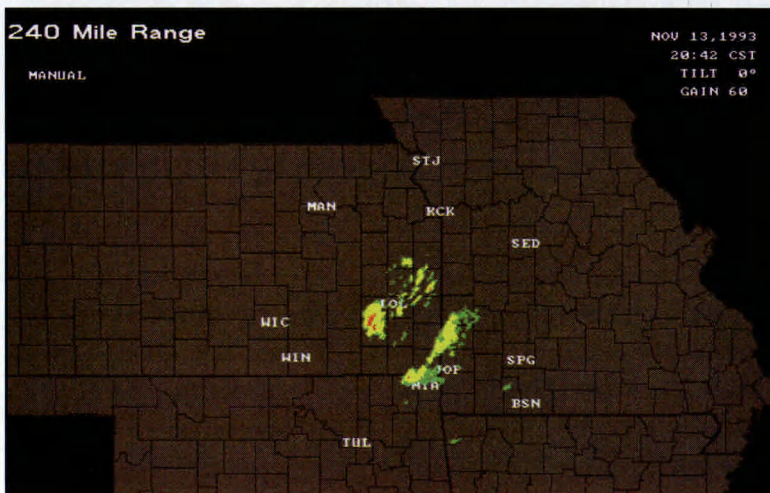
The images are 16-color in CompuServe's Graphic Interchange Format (GIF). The maps are available in 10, 20, 40, 80, 160, and 240 nautical mile scales. The maps include depictions of major cities, rivers, lakes, highways, and state roads.

Nautilus is pretty proud of their weather at \$1 per minute. But they do have some demonstration files you can call and download at no charge to see representative maps. Dial **(316)-365-7631**. At FIRST NAME?, enter WEATHER. At LAST NAME?, enter RADAR, and at PASSWORD, enter DEMO. From the main menu press I to get to the demonstration download area. Robin C. Boyer, **Nautilus Commercial Data System**, P.O. Box #645, Iola, Ks. 66749; **(316) 365-7559** voice/fax; **(316) 365-7631** BBS.



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THIS MONTH'S LISTS

by Brian Gallagher

On the small island of Oahu, perhaps best known for its treacherous surfing on the North Shore's Banzai Pipeline, a new wave is taking over, the electronic wave of Bulletin Boards. With a powerful undertow of 98 boards, BBS mania is sweeping island inhabitants off of their surfboards and onto their keyboards.

Keeping this migration in line, and online is Brent Davis, sysop of the **Land's End! BBS!(808)499-2527** and keeper of the list of Oahu, one of this month's featured lists. Davis is an aircraft mechanic for the Navy and does BBSing in his spare time as a hobby. He took over the caretaking of the list a year and a half ago because, "I was just getting tired of trying to figure out where the other boards were," he said.

One of Davis' main goals is to promote the use of BBSs throughout the community of Oahu, and eventually to incorporate the other islands that comprise the state of Hawaii, with some of the other islands coming online as early as the beginning of next year. Even though many of the boards on the list are as old and rigid as the fire coral under the crashing waves of the island, keeping the list up-to-date can still be quite a chore.

Helping Davis out the with frequently updated (monthly) list is Larry Kwiatkowski, a fellow sysop who runs the Imagination Station. And Kwiatkowski isn't the only one with a helping hand to lend on this small island community. The sysops from Network-One Hawaii, Ham Radio Landline and Board of Emergency Services all helped Davis get set up and start his own board. Consequently these are three of his favorite boards to access. "What it is is friendship," he said. "We all help each other out."

All of the BBSs on the list are using the GT Power Board as a base, and those in Davis' tight knit circle, who are big on "swapping," each have their own area of expertise, his is e-mail. When a new board comes online, Davis is quick to ZIP them a complete e-mail file to get them rolling.

On the whole Davis thinks BBSs are wonderful, except when people turn them into a business. "They (some individuals) want to charge money for e-mail," he said, something which is a

personal pet peeve of his. "I think e-mail should be free - it's a world wide thing; it puts people in touch who would never ever meet - it's the neatest thing in the world."

When Davis logs on to a new board the big grabber for him are graphics and color. "You know a sysop put time and creativity into a color board," he said. While he finds black and white boards "dull" and "generic."

On Davis' own Land's End! BBS!, game playing (Trade Wars, Legend of the Red Dragon, and Planets) are the most popular attraction, followed by the sharewarers who trade files back and forth as if they were playing gin rummy

for high stakes. And of course those into electronic talk play with the e-mail. Anyone interested in getting a current version of the soon to be expanded Oahu list can download it for free by typing in John Doe as a user, accompanied by the password: list, on the **Land's End! BBS!, Oahu, Hawaii(808)499-2527**.

Charlotte, North Carolina

Far from the shores of Hawaii, across the great expanse of the North American continent we come to our other featured list in Charlotte, N.C. This list, currently comprised of 87 BBSs, is meticulously updated every month by the husband and wife team of Blaine and Jennifer Schmidt.

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The Schmidts take turns and pride in personally calling and logging on to every board on their list, rotating the chore monthly. And when they access a board they always upload the previous month's list to keep everyone updated. Blaine, a computer technowiz who started programming at the boyish age of eight and now works as a programmer, and his wife Jennifer an Information Chemist, keep the list and their own board, Moobasi(704)541-9842, as a hobby.

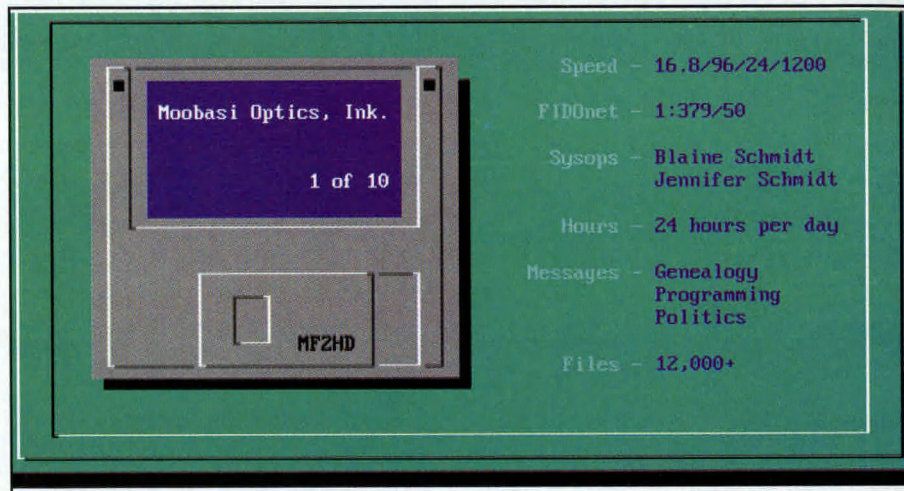
The Moobasi board, running with Wildcat software, is a different kind of a board, with a different kind of a name. First the name. It all started when the two were love-struck teenagers dating in America's dairy land - Wisconsin. Her parents, she said, used to poke fun at the young couple because they were always making "cow eyes" at each other. This combined with an advertisement featuring "Bossy" the cow, became the name of their first board in Minnesota. When they moved to Charlotte, the board, and the name moved with them.

The content of their board, (which is free), is also an original piece of work. Their main features are programming and genealogy, (their hobbies). And there are no games online, but they do have them in their files. They think there are enough boards out there that offer games and they wanted to offer something different. Other active areas of their board include, Science, History and general discussion.

"There is a lot of discussion about the Civil War," she said. Which is not surprising, considering that North Carolina was the first state to secede from the Union at the beginning of what was to become the Civil War.

A service they offer, that is most likely unique to Moobasi and the Schmidts, is "dinnerware." Dinnerware is a service for novice users who need assistance with getting functional in online communications. It consists of inviting the Schmidts over to dinner, and for dessert the pair will sit down and take the new user through the steps: familiarizing them with modems, BBSs, and the rest of the online world. What a great couple!

Jennifer likes boards with "very active message areas" and courteous users. Which is why she likes her board the best. "I think if it weren't



my favorite," she said, "I would be in big trouble." Boards that she doesn't much care for are those that push for money for a certain file or service when it is available on another board for free. She also isn't very fond of sysops who aren't consistent with the maintenance of their boards - keeping them running and responding to their mail. Although she said these factors have nothing to do with whether or not the BBSs are put on their list.

In the future Jennifer sees BBSs becoming much more prevalent throughout society. "Computers and

modems will be like television," she said. "People won't have encyclopedias at home, they will just log-on to get information." She also mentioned that Charolette is taking steps in this direction, with the local paper, and the library already accessible online.

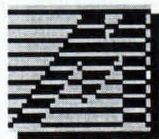
If any one is interested in Blaine and Jennifer's Charlotte, NC, **Moobasi BBS**, call:(704)541-9842. On it you will find, among other interesting stuff, a short story about a "cow-eyed" Prince and Princess who live a fairy tale romance. Sound familiar?

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CHARLOTTE, NORTH CAROLINA BBSs

NAME	PHONE	BPS	SYSTEM	SYSOP
Ace's BBS	(704)568-5028	14400	WWIV	Ace Man
Aces High	(704)825-5241	16800	DLG Pro	Jeff Lowrance
American Travel Network	(704)567-0893	14400	RmtAccess	Neil Sandage
Amiga Express	(704)882-2243	16800	RmtAccess	Frank Breneman
ARPnet	(704)372-6225	14400	Wildcat	Gene Cruse
Atlantis	(704)889-5920	2400	MajorBBS	Multitask
Batcave	(704)825-4449	2400	WWIV	Batman
Belmont Abbey	(704)825-6592	2400	VBBS	Bill Myers
Carolina Forum	(704)568-1663	14400	PCBoard	Sam Grier
Charlotte Apple BBS	(704)563-6233	14400	NovaLink	Mark Howard
Charlotte Commodore Usrs	(704)563-5090	2400	Color 64	Jerry Mason
Chewy Chunks	(704)552-7906	2400	WWIV	DuaneLeonards
Classic	(704)394-2642	14400	VBBS	Lucky
Company	(704)568-8064	14400	VBBS	Lucid
Computer Classifieds	(704)556-0707	2400	Wildcat	Pat Luttrell
ComStar	(704)541-1180	16800	RmtAccess	Todd Faulkner
Condom Sense	(704)825-2460	2400	VBBS	Baby Face
Cross	(704)343-0726	2400	VBBS	Victor Parks
Crystal Tower	(704)364-5637	2400	WWIV	Bahamut
Dark Empire	(704)825-7386	14400	VBBS	Darkseid
Deep Space 8	(704)553-0780	14400	WWIV	Medley Maker
Dogpatch USA	(704)391-3208	14400	WWIV	Lil' Abner
Dojo	(704)527-3656	2400	PCBoard	P. Rasmussen
DosDoctors	(704)333-4984	14400	RmtAccess	Brett Lay
Dragon Mountain	(704)882-6659	2400	WWIV	Shadow Elf
Electric Butterknife	(704)532-4230	14400	Gap	Chris Deger
ElectroMall	(704)825-9791	2400	VBBS	H. J. Reeves
Electron Circle	(704)841-8025	14400	WWIV	Artful Dodger
Emerald Glade	(704)522-9378	2400	VBBS	Blac Stag
Exchange	(704)342-2333	14400	Wildcat	Ron Alspaugh
Fantasy Island	(704)365-8745	9600	RmtAccess	Ross Lafleur
Federation Outpost 93	(704)394-2637	2400	WWIV	JFK
Fire House	(704)847-0500	14400	WWIV	Black Cat
First Timer's	(704)847-6235	9600	WWIV	FireStorm
Funny Farm	(704)525-1491	14400	WWIV	Benny Hill
Game Room	(704)392-7607	14400	WWIV	DoomsDay
Gate to Euphoria	(704)372-8710	14400	VBBS	P. Hollowell
Great & Secret Show	(704)393-1093	14400	VBBS	Komrade Klinton
HamShak	(704)825-1685	2400	VBBS	Robert Harris
Imminent Front	(704)554-1041	14400	WWIV	Steve Canyon
Just for Grins	(704)527-1711	14400	WWIV	Dave
Klubhaus Connection II	(704)568-0082	2400	VBBS	Puck
Lake Norman Connection	(704)892-6721	16800	WWIV	LJ
Land of the Shadow	(704)391-0581	14400	WWIV	Shadow Maker



CHARLOTTE, NORTH CAROLINA BBSs

NAME	PHONE	BPS	SYSTEM	SYSOP
Legal Eagle	(704)362-5532	14400	RBBS	Alan Kaplan
Maranatha!	(704)845-0416	16800	RmtAccess	J. Squicciarini
Masquerade	(704)391-1692	14400	VBBS	Sir Osis
Matrix	(704)535-7361	16800	SuperBBS	Andrew DeLisle
Meg Zone	(704)521-9997	14400	WWIV	Master Tracker
MetroLink	(704)568-6124	9600	RmtAccess	Matthew Irvin
Mile High Club	(704)366-8626	14400	Roboterm	Ice Man
Mint Hill Madness	(704)573-1933	9600	VBBS	Red Rider
Mission Control	(704)543-1911	14400	Renegade	Todd Lowe
Moobasi Optics, Ink.	(704)541-9842	16800	Wildcat	Blaine Schmidt
Mounties	(704)393-7338	9600	Telegard	S. Whiplash
Node Carolina	(704)663-7602	14400	TriBBS	Doug Henderson
Observer Online	(704)358-5072	14400	Synchronet	Gary Nielson
OmniScope	(704)825-2778	14400	PCBoard	Mark Compton
Orphanage	(704)664-5854	16800	RmtAccess	George Tracy
Outer Marker	(704)831-2437	14400	RmtAccess	John Price
Parallel Dimension	(704)892-3323	14400	WWIV	Stereo
Personal Touch	(704)545-1380	16800	Wildcat	John Pierce
Phoenix Systems	(704)542-8182	2400	MajorBBS	Joe Renna
Portal to the End	(704)846-5688	14400	VBBS	Sky Diver
Pro-Charlotte	(704)567-0029	14400	Proline	Shawn Goodin
Proflex Connection	(704)541-6161	14400	RmtAccess	Carson Economon
Programmer's Asst.	(704)544-2515	14400	Maximus	Carl Neal
Purgatory	(704)875-3145	14400	Wildcat	Thanatos
Rabbit Hole	(704)563-8474	14400	RmtAccess	Peter Rabbit
Real Estate Shop	(704)531-7375	14400	Wildcat	Jeff Tucker
Red Room	(704)566-9927	14400	VBBS	Dark Elf
Rogue Society	(704)573-2337	2400	WWIV	Brew
Scooter's Express	(704)822-6309	2400	VBBS	Scooter
Security Info. Service	(704)563-5480	2400	Wildcat	Ken Kennedy
Senior Support	(704)537-0287	2400	VBBS	Ron Russell
Singles Modem Line	(704)598-1341	2400	Wildcat	Dr. Adams
Sky is the Limit!	(704)527-4780	14400	RmtAccess	Scott Phillips
Soapbox	(704)531-6678	2400	VBBS Big John	
Software Shack	(704)544-1784	14400	RmtAccess	Paul Perry
Star Chamber	(704)568-3060	9600	VBBS	Chief
System 1 Info. Service	(704)523-0162	14400	VBBS	The <MASTER>
Technocracy	(704)527-5305	9600	Searchlight	Technicrat
Tholian Web	(704)527-3379	9600	PCBoard	David Harrison
Transporter Room	(704)567-9513	14400	RmtAccess	Ed Marquis
Uncle Bob's Abode	(704)563-2922	14400	WWIV	Uncle Bob
Valid Logic	(704)567-9447	14400	C-Net	MegaChip
Win32 Support BBS	(704)588-2669	14400	Maximus	Dale Ross

OAHU, HAWAII BBSs

NAME	PHONE	BPS	SYSOP
Ace-Hi	(808)622-2533	14400	Otto Cleveland
Aloha	(808)293-3644	2400	Sean Floyd
Aloha Network	(808)621-8845	14400	Johnny Brown
Alternate Realities	(808)239-9761	14400	Ben Martin
Asylum	(808)456-8541	14400	Suzy Q
Atlantis	(808)689-7734	14400	Ken Ludwig
Beyond the Trees	(808)942-9883	2400	Charles Roseberry
Big D's	(808)488-4732	14400	Irvin Dili
BitStream	(808)456-2775	14400	Bob Spencer
Black Hole]]	(808)834-1879	14400	Scott Gray
Board of Emergency Svcs	(808)621-4711	14400	Wayne Jones
Casa de la Chinchilla	(808)845-1303	9600	Dave DeWald
CB's Underwater Bar	(808)455-8758	14400	Christopher Baye
Charlie's House	(808)695-5761	14400	Charles Andrews
Chaos	(808)942-7552	14400	Daniel Camacho
CHUG (Commodore Users Group)	(808)672-6483	14400	Ben Tulchin
Coconuts	(808)845-7054	14400	Tom Taylor
Color Computer Library	(808)735-3776	14400	John Wight
Compatible Computer Club	(808)254-3369	14400	Mike Gawley
Computer Station	(808)528-5515	14400	Ron Skates
Construction Corner	(808)261-2781	14400	David Rains
Country Cupboard	(808)488-0617	14400	Jim Montgomery
Crow's Nest	(808)423-9788	14400	Robert Green
Cujo's Corner	(808)621-0803	14400	Josh Cuoio
Dan's Place	(808)624-9239	14400	Dan Halligan
Data Bank Hawaii	(808)944-8705	14400	Burgess Kaneko
Dept of BED (State of HI)	(808)586-2496	14400	Wade Kamikawa
Digital Illusion	(808)499-1929	14400	Chan Jackson
Dirty Duck	(808)487-2575	14400	Etoin Schrdlu
DPMA BBS	(808)523-8032	2400	Ivan Gum
Dragon's Lair	(808)423-2162	2400	Shawn George
Dungeon +	(808)456-4011	14400	Lawrence Manuel
Eminence Front	(808)682-4145	14400	Tim Russell
Enchanted Garden	(808)423-9852	14400	Silky Rose
End of the World	(808)499-1501	14400	Lou Ludwig
Fantasy Island	(808)689-0040	14400	Ken Ludwig
Flex	(808)732-7958	14400	Del & Kathy Wong
Fly by Night	(808)545-4629	14400	Eric Morikawa
Game Hub II	(808)682-5183	2400	David Mack
Godzilla	(808)487-3765	14400	Shuyuki Tanaka
GQ Link	(808)599-4577	14400	G.Q.
Graphics Workshop	(808)942-8789	14400	Vincent Shih
Hardcore Frontier	(808)524-8106	14400	The Monk
Ham Radio LandLine	(808)947-2738	14400	Robert Kaneko
Hawaii FYI	(808)536-7133	9600	State of Hawaii
Hawaii Online	(808)246-8887	14400	T & L Taylor
Hawaiian Computer Co.	(808)945-2910	2400	Charles Bannister
Hi State Legislature ACCESS	(808)296-4636	2400	Password = ACCESS
Hawaii Public Library System	(808)839-2020	2400	Tech Services



OAHU, HAWAII BBSs

NAME	PHONE	BPS	SYSOP
Hi-Tech Connection	(808)623-6461	2400	Joe DeGuzman
Higher Powered	(808)422-4722	14400	Tim Hagey
Homeboy Shopping Net	(808)624-1294	14400	David Roberts
Honolulu City Lights	(808)422-2535	14400	Ken Hills
HSSC (HI Software Svc Ctr)	(808)988-5008	2400	Mohammed Akhter
Imagination Station	(808)947-9421	14400	Larry Kwiatkowski
Jon's LateNite	(808)834-1261	14400	Jonathan Murray
KEEP, The	(808)624-4846	14400	Stephen Wallace
Land's End!	(808)499-2527	14400	Brent Davis
Lighthouse	(808)833-5258	14400	Jerry Bongard
Lion's Den	(808)499-1443	14400	Leon Sims
Listening Post	(808)689-8583	14400	Lou Braun
Local Boyz	(808)672-8680	14400	Mike Simao
Locker Room	(808)422-6072	14400	Jim Schell
Looking Glass	(808)422-1003	14400	Bill Drehabl
Loony Bin	(808)423-2923	14400	Michael Leppelman
Mac BBS	(808)456-8498	14400	D. Ott
Magic Castle	(808)732-6909	14400	Bill Arrington
Makaa	(808)672-8276	14400	Dennis Leong
Muskra's Den	(808)261-2184	14400	Phil Musgrave
Nookies in the Crater	(808)833-6862	14400	Shawn Muldowney
Oasis	(808)531-4805	2400	Wayne Davis
One Step Beyond	(808)695-8352	14400	Don Jones
PACE Computer Systems	(808)737-7223	14400	Edison Uy
Pacific Micro Systems Assn	(808)531-9786	14400	Russell Iwasa
Pandora's Box	(808)488-7651	14400	Don Dickinson
Paradise BBS	(808)625-5120	14400	Lou Steinritz
PC-LINK Hawaii	(808)526-3228	14400	Jerry Braun
Penzance	(808)677-7178	14400	John Banks
Peoples Choice	(808)942-8525	14400	Steve Thomlinson
Peter's Game Board	(808)833-2844	14400	Peter Hsin
Pit, The	(808)833-1525	14400	Steve Hansen
Prophet's Place	(808)625-3609	14400	Ryan Ozawa
Random Motion	(808)689-4043	14400	Louis Braun
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Reflecting Pool	(808)595-3228	14400	Chang Tzu
Robotech	(808)456-7745	14400	Douglas McLaughlin
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Satellite	(808)638-7247	14400	William Osborn
Starport 9	(808)624-0633	14400	Matt Hamrick
Temple of None	(808)254-0942	14400	Craig Burger
The Shadow	(808)261-4302	14400	Dirk Harris
The Splicer	(808)396-2420	14400	Wyatt Barbee
TransAmerica	(808)456-7745	14400	Black Fire
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UH Library System "LIB"	(808)956-9333	2400	Univ. of Hawaii
Vision of Paradise	(808)833-9598	14400	Rick Paradise
Wall Street Connection	(808)521-4356	14400	Keith Nakata
Warp Speed	(808)486-0253	14400	Allen Hoffman

BOARDWATCH

LIST OF BBS LIST KEEPERS

This listing comprises a list of those who compile and maintain lists of bulletin boards, either by topical category, or by some geographic area or definition - often by area code. The primary bulletin board system where the list can be downloaded electronically is also included.

BBSLIST TOPIC	LIST AUTHOR/EDITOR	CONTACT BBS	TELEPHONE
Republic of South Africa	Henk Wolsink	Catalyst BBS	(041)34-1122
BBS With Handicapped Focus	Bill McGarry	Handicap News BBS	(203)337-1607
Connecticut AC 203	Kevin Brook	Creative Edge BBS	(203)743-4044
Seattle AC 206/West Washington	Bob Dinse/Nanook	Eskimo North	(206)367-3837
Tacoma Washington AC 206	Richard Langsford	AmoCat BBS	(206)566-1155
Autocad Related BBS	Jason Osgood	SAUG BBS	(206)644-7115
Kitsap County Washington	Michael Schuyler	Quicksilver BBS	(206)780-2011
Maine 207	Scott R. Bodeen	Street Corner BBS	(207)442-0997
Astronomy/Space BBS	John Pickens	Starbase III BBS	(209)432-2487
Central California AC 209	Jack Porter/Madera UG	Zen Den Systems	(209)675-8436
Graphical User Interface BBS	David Shapiro	The Goopy (GUI) BBS	(212)876-5885
96 List - 9600+bps BBS	Ken Sukimoto	Downtown BBS	(213)484-0260
Open Access UNIX Site List	Phil Eschallier	LGNP1 (login:BBS)	(215)348-9727
Pennsylvania AC 215/609/302	Ron Brandt	DSC/VOICENET	(215)443-9434
Cleveland Area 216	Jim Barry	Flip Flop	(216)951-9134
Champaign-Urbana IL AC 217	Eddie Thomson	The Dungeon BBS	(217)355-1214
Conservation/Nature BBS List	D.Wendling/JS Christianso	Coin of the Realm	(301)585-6697
Ham/Amateur Radio BBS	Stan Staten	3WINKs BBS	(301)590-9629
Handicapped Issues BBS	Richard Barth	HEX BBS	(301)593-7357
Desktop Publishing BBS	Frank Atlee	Infinite Perspective	(301)924-0398
Delaware AC 302	Vince Boehm/Dave Osburn	Talk Radio BBS	(302)429-7667
Medical Issues BBS	Edward Del Grosso	Black Bag	(302)994-3772
Colorado AC 303/719	Willis Morrow	Big Boy's BBS	(303)458-3832
Cave Exploration BBSs	Douglas L. Moore II	The CatEye BBS	(304)592-3390
South Florida Area 305/407	Eric Thav	Silicon Beach BBS	(305)474-6512
Southern California	Mike Hefferman	SOCAL Corner	(310)422-7942
California AC 310	Jim Walton	Illusions BBS	(310)804-3324
Detroit Area 313	Horst Mann	Tony's Corner	(313)754-1131
St. Louis AC 314	Beth Brooks	Fire Escape's Dir	(314)741-9505
ASP BBS Member List	Bob Ostrander	PBS-BBS	(317)856-2087
Engineering Related BBS	Arthur Petrzalka	Computer Plumber	(319)337-6723
Rhode Island Area 401	Mike Labbe	Eagle's Nest	(401)732-5292
Calgary Alberta AC 403	Jose del Rio	The Quantum BBS	(403)252-5119
Atlanta Area 404	Online Atlanta Society	OASIS	(404)627-2662
Atlanta Area 404	Rodney Aloia	INDEX System	(404)924-8472
Orlando Florida AC 407	Matt Drury	London BBS	(407)895-1335
San Francisco Bay Area	Mark Shapiro	BABBA BBS	(408)946-5642
Baltimore Area 410	Brad Blase	Silver Streak BBS	(410)683-1583
Pittsburgh AC 412	Chas Stokes	Zuul's Catacombs	(412)264-9787
National BBS List	DP McIntire/Beth Spotts	Ameriboard	(412)349-6862
Milwaukee Area 414	Jay Jadofsky	Priplanus	(414)442-0170
Toledo Ohio Area	Ryck Zarick	Programmer's Tech	(419)478-7333
Arkansas Area 501	Bob Underdown	The Gaslight BBS	(501)444-8420
Kentucky AC (502)	Dan Elder	National Data Exchg	(502)942-2848
Louisville KY AC 502		Old Soldier's Home	(502)942-2848
Portland Oregon BBS	Lisa Gronke	DawGone Disgusted	(503)297-9145

BBSLIST TOPIC	LIST AUTHOR/EDITOR	CONTACT BBS	TELEPHONE
New Orleans BBS List	Jeff Jones	Southern Star BBS	(504)885-5928
Worcester MA AC (508)	Jim Metzler	Miwok Village BBS	(508)754-6512
Corpus Christi	James Cordani	Treasure Island	(512)241-8358
Austin Area BBS List AC 512	John Foster	Camel's Back BBS	(512)243-0077
Selected BBS	Joseph Caplinger & Son	J&J's BBS	(513)236-1229
List of Gay/Lesbian BBS	Eric Blair	S-TEK BBS	(514)597-2409
AC 516 Free Shareware BBS	Harold Stein	Long Island Exchange	(516)271-6523
Area Code 517 - Mid-Michigan	Rick Rosinski/SAMM	Wolverine BBS	(517)695-9952
Business/Professional BBS	Dennis Hauser	Delight The Customer	(517)797-3740
Phoenix AC (602)	John Mendivil	Majestic Royalty BBS	(602)278-1651
Phoenix AC (602)	Sue Widemark	Cheese Whiz BBS	(602)279-0793
Cochise County Arizona	Kevin McCrory	The Commo Shack BBS	(602)452-0587
Wisconsin 608		JW-PC Dataflex.HST	(608)837-1923
New Jersey AC 609	Dave Schubert	The Casino PCBoard	(609)561-3377
New Jersey Area 201/609/908	Wayne R. Morton	Praedo BBS	(609)953-0769
Minnesota Twin Cities AC 612	Barry Watson	Abiogenetic BBS	(612)774-8454
Apple II BBS	Mike Shecket	Way Out	(614)436-4846
Tennessee AC 615/901	unknown	SPDA Info Service	(615)952-5638
San Diego, CA AC 619	Ron Dipold	ComputerEdge	(619)573-1675
San Diego AC 619	Joe Nicholson	General Alarm	(619)669-0385
Apple II BBS with Internet con	Morgan Davis	pro-sol	(619)670-5379
Virginia AC 703/804	Scott Dickinson	TOSOR BBS	(703)366-4620
OS/2 BBS Systems	Pete Norloff	OS2/Shareware BBS	(703)385-4325
Washington DC BBS List	Mike Focke	Interconnect	(703)425-2505
Genealogy Related BBS	Richard A. Pence	NGS-CIG	(703)528-2612
Charlotte NC AC 704	Blaine Schmidt	Moobasi Optics, Ink	(704)541-9842
Ontario Area 705	Alex Draper	Cottage Country BBS	(705)835-6192
Black Run/Oriented BBS	Arthur "Rambo" McGee	BDPA BAC BBS	(707)552-3314
Chicago	Paul Chartraw	The Hideaway BBS	(708)748-1911
Airline Pilot/JUMPSEAT BBSs	Rex Chadwell	ChicAgo Hangar	(708)980-1613
Houston Area 713	David E. Wachenschwanz	Atomic Cafe BBS	(713)530-8875
Rochester NY AC 716	Tracy Logan	Logan's Run	(716)256-2659
National 800 Number BBS List	Michael Long	Hayes Online	(800)874-2937
CompuCom Modem BBS List	Thomas Weathers	Referral Market BBS	(803)297-4395
Macintosh BBS	Bill Taylor	Fort Mill Tabby	(803)548-0900
Ecology/Conservation BBS	Bob Chapman	EarthArt BBS	(803)552-4389
Firearms Related bbs	Jerry Brunet	Neon Nights	(804)588-4978
Wildcat! BBS	Jim Harrer	Wildcat! HQ	(805)395-0650
Central California Area 805	Larry Honore	His Board	(805)652-1478
Oahu Hawaii	Brent Davis	Land's End BBS	(808)499-2527
Technical Support BBS List	Gary Barr	Digicom BBS	(812)479-1310
Pinellas/Tampa Florida AC 813	Emery Mandel	Mercury Opus	(813)321-0734
Kansas City Area 816/913	Roy Timberman	Sound Advice	(816)436-4516
Dallas/Ft Worth Area 214/817	Mark Robbins	Second Sanctum	(817)784-1178
Occult BBS	Phil Hansford	Mysteria	(818)353-8891
Commodore 64/128/Amiga BBS	John Rigali	Night Gallery	(818)448-8529
National Adult BBS List	Clayton Manson	Titan BBS 1:3612/140	(904)476-1270
Alaska AC 907	Patti Johnson	Alaska Pirate Soc.	(907)248-9364
Darwin National USBBS List	Bob Breedlove	Bob's BBS	(916)929-7511
OS/2 Related BBS	Dave Fisher	LiveNet 1:170/110	(918)481-5715
Tulsa Oklahoma Area BBS List	Linda Hargraves	ACCESS AMERICA	(918)747-2542
Raleigh NC Area Code 919	Mike Stroud	Micro Message Svc.	(919)779-6674
U.S.S.R. BBS List	Serge Terekhov	Court Crimson King	7-3832-356722

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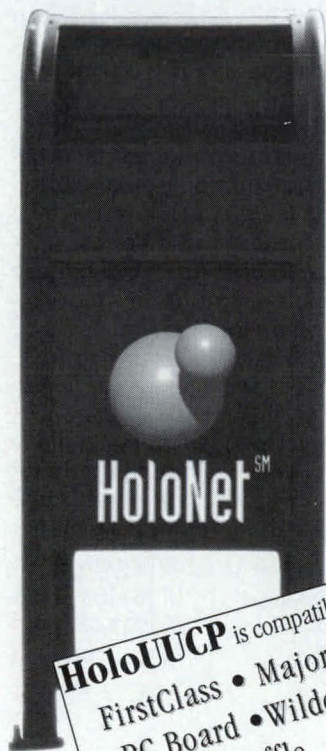
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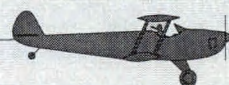
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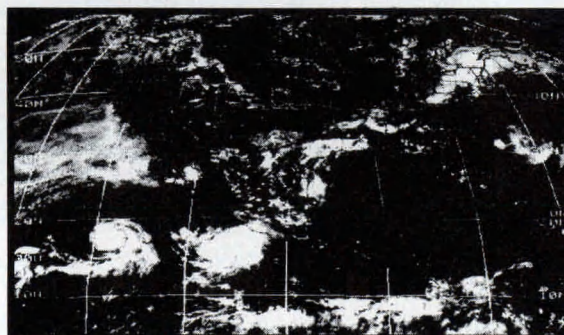
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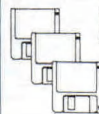
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Dreamline Information Network (201)765-9090 Florham Park, New Jersey since 10/92. Sysop: Anthony Stramaglia. Using MajorBBS 6.12 with 16 lines on MS-DOS 80486 with 5000 MB storage. Aceex at 9600 bps. \$25.00 Annual fee. Mention this ad and get trial access. But look at what just \$25 a year gets you: 7 CD-ROMs, adult sections, Interlink chat, MajorNET echos, huge online arcade of games and external doors, RIP support, high-speed lines, friendly dedicated staff and users.

Chat Chalet (201)791-8850 Saddle Brook, New Jersey since 04/91. Sysop: Ronnie Meier. Using MajorBBS 6.12 with 24 lines on MS-DOS 80486 with 877 MB storage. Practical at 14400 bps. \$10.00 Monthly fee. Where New Friends Meet (We get over 700 calls each day) Send us your picture we will make you a GIF (FREE)

BEACON STUDIOS BBS (201)863-5253 Union City, New Jersey since 01/93. Sysop: Conrad Koblack. Using Major BBS 6.11 with 8 lines on MS-DOS 80486 with 15090 MB storage. Supra at 14400 bps. \$.50 Hourly fee. Free trial period and Free downloads to new users. NJ's largest database of D/L files with 18 CD's on-line. NJ's largest Non-X rated Graphics database with 6 Graphics Libraries. Voice/Customer Support line. 2 National Chat linkups.

Jezebel's Parlour BBS (201)927-2932 Flinders, New Jersey since 04/92. Sysop: Beverly Delisa. Using TBBS 2.2 with 12 lines on MS-DOS 80386 with 120 MB storage. US Robotics at 9600 bps. \$50.00 Annual fee. Over 7 gigabytes of files, including adult graphics. New in-house scanned Gif files added each week. Online games and databases, user to user chat, conference areas, and adult matchmaking. The BBS with the feminine touch!

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MasterPiece (206)639-0899 Seattle, Washington since 01/93. Sysop: Greg Byrd. Using MajorBBS 6.12 with 48 lines on MS-DOS 80486 with 17000 MB storage. US Robotics at 16.8 bps. \$.40 Hourly fee. Also ZyXel 16.8 modems! With 24 CD's online, we have the largest file base on MajorBBS in the Northwest! Chatlink from 6pm to Midnight NIGHTLY, MailLink, Multi-user games, including Tele-Arena, Mutants!, Galactic Empire and MUCH more! Visa/MC/900.

ProStar Plus (206)941-0317 Auburn, Washington since 01/88. Sysop: Robert Michnick. Using MajorBBS 6.11 with 91 lines on MS-DOS 80486 with 10000 MB storage. US Robotics at 14400 bps. \$.50 Hourly fee. Join the Best in the West, 200,000 files, MajorNet Central Hub nightly national chats via InterLink, 75 games, national access from 500 cities, ProStar After Dark for the over 18 crowd, free Internet access, Seattle DateLine, real-time stocks and MORE!!

Exxtacy Adult BBS (209)962-4045 Pine Mt. Lake, California since 04/86. Sysop: Victoria Cummings. Using Major BBS 6.0 with 4 lines on MS-DOS 80486 with 2000 MB storage. US Robotics at 9600 bps. \$25 Annual fee. Large Hi-Rez Adult File collection with over 8,000 erotic files. NEW MEMBER BONUS - FREE Adult XXX VHS Video Tape with each membership. Additional features include on-line games, Graftiti wall, CHAT, Sig's, Classified's and more. VISA/MC accepted online.

TRI-COM Data Network (210)725-5398 Laredo, Texas since 01/93. Sysop: Rod Wilkens. Using MajorBBS 6.11 with 6 lines on MS-DOS 80486 with 500 MB storage. US Robotics at 14400 bps. No fee. MajorNet Mailink address (@TRI), 6 CD's online including adult, national Chat Teleconference nightly, Multi-Player games, online Computer Store & classified ads, BBS database. Downloads available on first call. Membership upgrades by our 900 number.

Access New York (212)580-6473 New York, New York since 05/93. Sysop: Mark Green. Using MajorBBS 6.11 with 2 lines on MS-DOS 80486 with 600 MB storage. TelePath at 14400 bps. No fee. AccessNY gives you your own INTERNET mailbox and access to all News-groups. AccessNY also includes Happenings In Town; GameSpace with Crossroads, War Games, Trade Wars (ASAP) & more; Reviews; Listings; BookSpace; Classifieds; Personals; & Shareware.

COMPUTERS & DREAMS BBS (212)888-6565 New York, New York since 01/91. Sysop: William P. Stewart. Using PCBoard 15 with 10 lines on MS-DOS 80486 with 2600 MB storage. US Robotics at 57600 bps. No fee. NEW YORK CITY'S BEST BBS! Call and find out for yourself! Access is FREE! Graphical Interface. Dozens of GAMES, Thousands of FILES, Great CHATTING, PRIZES, and an Adult Area. We echo mail in RIME and Throbneth. Soon to have INTERNET. PCPursuit: NYNYO

The Downtown BBS (213)484-0260 Los Angeles, California since 08/88. Sysop: Ken Sukimoto. Using MajorBBS 6.11 with 6 lines on MS-DOS 80386 with 6800 MB storage. US Robotics at 14400 bps. \$1.00 Hourly fee. Featuring VGA, SVGA Adult graphics. Original adult GIFs. 28,000+ adult files on 6 CD's & 4Gb of hard drive storage. Originating system for 96LIST & MajorNet Node List. All lines v.32bis; 16.8k ZyXEL & 14.4k HST available. MajorNet Node-ID: @DWN.

The Liberty BBS (213)732-2300 Los Angeles, California since 07/92. Sysop: John Galt. Using MajorBBS 6.11 with 58 lines on MS-DOS 80486 with 5420 MB storage. US Robotics at 2400 bps. \$10 Monthly fee. Local phone numbers listed online for 8 area codes & PC-Pursuitable at D/CASAN/24 ATDT 9967777. Nationwide ChatLink, WorldLink, MailLink & MajorNet. Internet E-Mail & Usenet newsgroups for subscribers. Free time on every call. Much much more!

The Westside (213)933-4050 Los Angeles, California since 04/87. Sysop: Dave Harrison. Using Metropolis 1.06b with 70 lines on Qnx with 5000 MB storage. AMT 2400 at 2400 bps. \$57 Monthly fee. One of LA's friendliest, largest and most active Adult bbses! Chat Online Games Windows Shareware Files 25,000+ GIFs Animations Adult Stories Public Forums More! 4000+ Members. Special Disabled Vet Senior Student Rate. FREE Trial for Boardwatch Readers!

BCS BBS (213)962-2902 Los Angeles, California since 03/92. Sysop: Jim Lee. Using WildCat 3.90P with 6 lines on MS-DOS 80486 with 2500 MB storage. US Robotics at 14400 bps. \$52 Annual fee. Los Angeles' Premium BBS. Full subscription. ILink, CaluLink & Internet, Usenet. Quality files only. New services regularly added. All major credit cards. 6 high speed lines and growing rapidly.

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Aspen Link-Up (800)277-3699 Basalt, Colorado since 06/93. Sysop: Phillip Schultz. Using Custom with 2 lines on UNIX with MB storage. US Robotics at 14400 bps. \$9/hr Hourly fee. Focuses on Aspen, CO Calendar events+ski report+weather, local guide, accommodations. Direct Internet connection, e-mail, ftp, telnet, 3K discussion groups include skiing and ecology, easy to use, 25K files, USA Today online. 3BBS in 1. Call 800/748-1200 to join.

Whiplash BBS (803)776-8864 Columbia, South Carolina since 04/93. Sysop: Brian Hostinsky. Using PCBoard 15.0 with 2 lines on MS-DOS 80386 with 5200 MB storage. US Robotics at 14400 bps. \$25.00 Annual fee. South Carolina's fastest growing BBS. Over 5 Gigabytes of files avail. for downloading. Large Message base, Nets ranging from FidoNet to WWIVNet. New monthly CD Shareware Updates. 8 CDRoms online. BoardWatch Magazine Online. High-Speed Modem Giveaway.

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Mercury Opus (813)321-0734 St. Petersburg, Florida since 09/88. Sysop: Emery Mandel. Using PCBoard 15 with 10 lines on MS-DOS 80386 with 10000 MB storage. US Robotics at 16800 bps. \$10 Monthly fee. HUGE message area, over 1300 conferences, 80,000 quality Amiga, Mac, DOS, Windows, OS/2 and X-rated files with new files daily, 10+ networks including Internet and Usenet, games, chat, matchmaker, fax gateway, BBS lists, instant access via credit card.

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Antique Toys & Collectibles BBS (813)799-9459 Clearwater, Florida since 06/93. Sysop: Clint Nye. Using MajorBBS 6.11 with 2 lines on MS-DOS 80486 with 500 MB storage. Reveal at 2400 bps. \$45 Annual fee. System dedicated to antique toys & collectibles enthusiasts', hobbyists', collectors', & dealers. Online SHOPPING MALL runs 24hrs a day, 365 days a year. List your collection, 'E-Mail, Forums, etc. Small monthly fee for stores set up.

Inner Sanctum BBS (813)848-6055 New Port Richey, Florida since 03/85. Sysop: Rob Marlowe. Using TBBS 2.2 with 6 lines on MS-DOS 80386 with 5200 MB storage. Hayes at 14400 bps. \$25 - \$50 /yr fee. Pinellas County Access number (813) 934-5533. Online games, huge file library, online chat. FidoNet. Look around for free. Give us a call and check us out.

Digital Aspects (901)758-2580 Memphis, Tennessee since 12/92. Sysop: Chuck Breazeale. Using TBBS 2.2 with 8 lines on MS-DOS 80386 with 14000 MB storage. US Robotics at 14400 bps. \$7.00 Monthly fee. ALWAYS the MOST of the BEST! 20 CD's ALWAYS online. ALWAYS provides the entire 40-50MB InterNet msgs each day! Features the Shareware Distribution Network, always giving you the LATEST and the BEST! Over 45,000 Adult .GIF's and animations!

Isle-Net (908)495-6996 North Middletown, New Jersey since 10/84. Sysop: Dan. Using TBBS 2.2 with 12 lines on MS-DOS 80386 with 244 MB storage. US Robotics at 14400 bps. \$45 Annual fee. Internet mail, Usenet newsgroups, erotic fantasies written by members. Free chat on your first call! Challenging games, lots of files to download. Stop by and have your Tarot cards read online. We do it better because we've done it since 1984!

InfoMarket Express (908)879-7209 Chester, New Jersey since 01/93. Sysop: Edward Brzezowski. Using PCBoard 14.5a with 3 lines on MS-DOS 80486 with 400 MB storage. Hayes at 14400 bps. No fee. InfoMarket Express - Where information is bought and sold online. Free access, no subscription or registration fees. Providers make money when their files are sold. Please note that 908 is a new area code in NJ and not a 900#.

The Underground BBS (908)914 2221 Beachwood, New Jersey since 12/86. Sysop: Sir William. Using MajorBBS 6.12 with 24 lines on MS-DOS 80486 with 4000 MB storage. US Robotics at 14400 bps. \$5 Monthly fee. The ORIGINAL Underground, one of NJ's biggest and most popular systems. RIPgraphics, 4 CD Roms, Killer ANSI, XXX Adult Available, Global Commands and Actions, online DOORS, Mail, multiplayer teleconference games including TeleArena. It's worth the trip.

Bits and Bytes BBS (909)356-5762 Fontana, California since 09/91. Sysop: Barly Redsar. Using PCBoard 15.0/10 with 7 lines on MS-DOS 80486 with 6500 MB storage. US Robotics at 16800 bps. \$20 Annual fee. BEST BBS around! You do not believe us? Well call and find out for yourself! How can you go wrong? Over 35000 files online (every week we have 500 new files), 50 Door games, 600 conferences (RIME, U'NI, Rosenet, & Throbneth). Large selection ADULT ONLY GIF

Legend Graphics OnLine (909)689-9229 Riverside, California since 11/91. Sysop: Joey Marquez. Using PCBoard 15 with 10 lines on LAN Network 80486s with 6000 MB storage. US Robotics at 14400 bps. \$60 Annual fee. Nation's One Stop Graphics BBS! You will be impressed! Huge Adults Only File Areas! Simply the BEST in Southern California! SuperVGA Photo Images, Video in Motion MoviePICs! Visa MC AmExp Optima accepted.

The Erotic Shopping Network (913)780 0005 Olathe, Kansas since 04/93. Sysop: Dave McVey. Using MajorBBS 6.1 with 2 lines on MS-DOS 80386 with 170 MB storage. Zoom at 9600 bps. No fee. Online ADULT mail order company. Featuring online order entry and viewing of intimate lingerie, lotions and oils, marital aids, adult novelties and adult games. Catalog available in hardcopy or online. Must be 21. MC/VISA Welcome.

ExecNet (914)667-4567 Mount Vernon, New York since 11/85. Sysop: Andy Keeves. Using PCBoard 15.0 with 20 lines on MS-DOS 80386 with 14000 MB storage. US Robotics at 19200 bps. \$Fee Flexible fee. Bringing you the world. Free online eval. time. 8 hrs/call, up to 32MB download/call. 90K+ files, 4K Int'l confs., Usenet/Internet, Immediate access with major credit card, Fantasy Area. Email to/from CompuServe, MCI. 10MB+ new files daily.

The Lost Carrier BBS (914)964-0419 Yonkers, New York since 01/92. Sysop: Gerry Schechter. Using PCBoard 15.0/10 with 1 line on MS-DOS 80386 with 660 MB storage. HST/DS 16.8K at 16800 bps. No fee. Full FREE access at all times! Official Apogee/Epic/MVP dist site. Let your hair down in the Free4All conference. Download on your first call. Online games. Call now if you just want to have some fun. Sysops call for info on LostNet network

Black Gold BBS (918)272-5386 Tulsa, Oklahoma since 06/81. Sysop: Michael Cline. Using PCBoard 15.0 with 12 lines on MS-DOS 80486 with 18000 MB storage. US Robotics at 57600 bps. \$30 Annual fee. Full Internet, Rime, Inteltec, 50mb+ per day, USAToday, Over 90 Doors, Full time SYOP's and much much more. Many free areas and files with 45 minutes free access per day. 225 file areas and over 200,000 zip files. Customer support. Since 1981.

Micro Message Service (919)779-6674 Raleigh, North Carolina since 10/82. Sysop: Michael M. Stroud. Using TBBS 2.2 with 10 lines on MS-DOS 80486 with 7500 MB storage. US Robotics at 14400 bps. \$45.00 Annual fee. NC's # 1 online info service support for PC, Mac, Amiga and Atari ST. Hundreds of new files added weekly. Expert leaders for each SIG. Authorized eSoft dealer, system design and TDBS programming. Give your online system a leading edge, call us first.

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BOARDWATCH MAGAZINE

NATIONAL LIST OF ELECTRONIC BULLETIN BOARDS AND ON-LINE INFORMATION SERVICES - DECEMBER 1993

SERVICE	PHONE	DESCRIPTION	SPONSOR/SYSOP	LOCATION
ADA 9X Project Bulletin Board	(800)232-9925	ADA Programming Language Revisions and News	Chris Anderson/Susan Carlson	Eglin AFB, FL
ADA Information Clearinghouse	(703)614-0215	Information on ADA Programming Language/Military Specs	Department of Defense	Washington, D.C.
Advanced Data Services Inc.	(301)695-9116	22 line PCBoard with 5.5 GB of Files	Blaine Brodka	Frederick, MD
Alamo PC Organization	(210)496-5558	Numerous Files, Info	Robert Schoenert	San Antonio, TX
Albuquerque ROS	(505)299-5974	36000 files/USA Today/Tradewars/Online Games	Steven Fox	Albuquerque, NM
Alternatives BBS	(604)430-8080	Environmental issues, Home of Greenpeace International	Bob Lyons	Vancouver, BC
America's Suggestion Box	(516)471-8625	BBS Devoted to Collecting and Distributing Consumer Feedback	Joseph G. Jerszynski	Ronkonkoma, NY
American Cybernetics BBS	(602)968-1082	Multi-Edit Product Support BBS	American Cybernetics	Tempe, AZ
ANARC BBS	(913)345-1978	World Radio/TV Handbook - Short Wave Freq Lists/Scheds.	Assoc. of North American Radio Clubs	KS
APCUG - GlobalNet	(408)439-9367	Association of PC User Groups - Over 2000 UG officers	Paul Curtis/APCUG	Scotts Valley, CA
Applied Modeling Research RBBS	(919)541-1325	Environmental Protection Agency Atmospheric Models	William Peterson/EPA	Hurdle Mills, NC
Aquila BBS	(708)820-8344	6 GB 25 Nodes Fidonet/Interlink/Metronet MCE IL/CHI Graphics	Kevin Behrens/Steve Williams/Doug Bell	Aurora, IL
Argus Computerized Exchange	(617)674-2345	Multiline Community Chat Service - Restaurant Review dbase	Pam Morrison	Lexington, MA
AST Technical Services BBS	(714)727-4723	Superb support system for AST Computer Products	AST Research Inc.	Irvine, CA
AT&T Support BBS	(908)769-6397	Support for PC 6300 and Other AT&T PC Models	American Telephone/Telegraph PC Division	Plainfield, NJ
ATI Support BBS	(416)756-4591	Support for ATI Modems and Video Cards	ATI Technologies	Scarborough, Ontario
Atomic Cafe BBS	(713)530-8875	Houston Area BBS list and Connect! Magazine	David Wachenschwanz	Houston, TX
Attention to Details	(714)681-6221	Utilities/ASP/Patriquin Utis/Protocols	Clint Bradford	Mira Loma, CA
Audiophile Network	(818)988-0452	High-end Audio Components, Music, Video Reviews	Guy Hickey/Quatre Speakers	Van Nuys, CA
Automobile Consumer Services	(513)624-0552	New Car Pricing Reports - Used Car Value Reports	Automobile Consumer Services Inc.	Cincinnati, OH
AviTechnic 1.261/662	(301)252-0717	Software Distribution System - BBS Utilities	Tom Hendricks	Lutherville, MD
BBS America	(214)680-3406	Home of DFW Online Electronic Newsletter	Jay Gaines	Richardson, TX
BCS BBS	(213)962-2902	Los Angeles' First Super BBS Under Development	Jim Lee	Los Angeles, CA
BCS IBM BBS	(617)964-2540	IBM PC Topics - TBBS Software (Internet)	Boston Computer Society/Martin Hannigan	Boston, MA
BCS Info Center BBS	(617)621-0882	General Topics - TBBS - Internet Mail	Boston Computer Society/Martin Hannigan	Boston, MA
BCS Mac BBS	(617)864-0712	Macintosh Topics - Firstclass BBS Software	Boston Computer Society/Martin Hannigan	Boston, MA
Beach Board BBS 1:371/1	(813)337-4950	Over 100 online games - Internet Mail - 8 lines - 48000 fls	Dave Ward	Fort Myers, FL
Beyond Eternity	(310)371-3734	Home of EEEKI Bits - Weekly Electronic Trivia Magazine	J. Black/K. Taghadossi	Torrance, CA
BMUG BBS	(510)849-2684	Support for Macintosh owners - files - conferences	Berkeley Macintosh Users Group	Berkeley, CA
Boardwatch Magazine Online Info	(303)973-4222	Distribution Service for USA Today/Boardwatch/Newsbytes	Boardwatch Magazine	Littleton, CO
Book BBS	(215)657-6130	Information on 2000 Computer Books - 800 order number	Business & Computer Book Store	Willow Grove, PA
Book Stacks Unlimited	(216)694-5732	200,000 Book Titles Database - Online Ordering	Charles Stack	Cleveland, OH
Borland Download BBS	(408)431-5096	Utilities, Macros, Programming Examples for Borland Products	Borland International/Mike Fitz-Enz	Scotts Valley, CA
Bothay Bay EIS	(603)431-7229	20 GB of Files - Adult areas - BBS Lists	Myles Bratter	Portsmouth, NH
Boundary Waters BBS	(218)365-6907	Canoe Trips/Resorts/Fishing/Wilderness in Minnesota	Gary Knopp/InfoNorth	Ely, MN
Bruce's Bar & Grill	(203)236-3761	24-line Social System - Chat - Games - Downloads	Bruce Lomasky	West Hartford, CT
Bryant Software	(303)733-0773	Support & Demo of Bryant Software & TBBS Products	Alan Bryant	Denver, CO
C.A.R.L. Library Service	(303)758-1551	Citations to 4 Million Texts in Colorado Library System FREE	Colorado Alliance of Research Libraries	Denver, CO
CAD/Engineering Service	(615)822-2539	Computer Aided Design File Distribution Network 1:116/32	Stan Bimson	Hendersonville, TN
Canada Remote Systems	(416)213-6003	23GB/400000+ files, 3500 Conf's, USENET, IBM/Amiga/Mac	Neil Fleming/Jud Newell	Mississauga, Ontario
Capital PC User's Group BBS	(301)738-9060	One of the oldest PC User's Groups - 5500 members	Capital PC Users Group/Roger Fajman	Rockville, MD
Castle Tabby 107/412	(908)988-0706	Home of TABBV Fidonet Interface Program for Apple Macintosh	Michael E. Connick	Bradley Beach, NJ
Caverns of the Abyss	(405)482-2980	4 Gigs Online CD Roms	Shannon Graham	Altus, OK
CBBS/Chicago	(312)545-8086	First Electronic Bulletin Board - Since 2/16/78	Ward Christensen/Randy Suess	Chicago, IL
Celebration Station	(207)374-5161	Adventure Games, Chat, and Sigs - Children	Noel Stookey (Paul of Peter, Paul & Mary)	Blue Hill Falls, Maine
Central Point Software	(503)690-6650	PC Tools - Central Point Anti-virus support board	Central Point Software Inc.	Beaverton, OR
Channel 1	(617)354-8873	70-line PCBoard - 8 GB Files - Internet - 1000's msg. confs.	Brian Miller/Tess Heder	Cambridge, MA

Chicago SysLink	(708)795-4442	Special Interest Areas for Ferret/Pet Owners, TRS80/Aviation	George Matyaszek	Berwyn, IL
Chinet	(312)283-0559	UNIX System offering Internet Mail	Randy Sues	Chicago, IL
City Lites PCBoard	(701)772-5399	9 GB files, Rimenet, Internet, FidoNet, ASP, Online Orders	John Lundell	Grand Forks, ND
Classi Computer Fields	(317)359-5199	Online System for Classified Advertisements	Steve Edsall/Trader Newspaper	Indianapolis, IN
Classified Connection BBS	(619)566-7347	Giffy Girls - Nude GIF Images of the Girl Next Door	Bill Kennon	San Diego, CA
Cleveland Freenet	(216)368-3888	Cleveland City Info/Public Library - Free Internet Mail Box	Case Western University/AT&T/Ohio Bell	Cleveland, OH
Cloud Nine	(713)855-4382	15 meg, 30 Nodes	Harold Lucas	Houston, TX
Colorado Connection	(303)423-9775	Breeding, Raising, Taming, Exotic Birds	Terry Rune/Dave McClaugage	Arvada, CO
Community News Service (CNS)	(719)520-5000	News and Entertainment - 17 Lines Community Focus	Klaus Dimmler	Colorado Springs, CO
Compact Audio Disk Exchange	(415)824-7603	Buy/Sell/Trade Compact Audio Disks Online	Wayne Gregori	San Francisco, CA
Computer Business Services	(714)396-0014	Book/Publishing Consultant Nick Anis' BBS	Nick Anis Jr.	Diamond Bar, CA
Computer Garden	(301)546-1508	Treasure Hunting - Metal Detectors - Online Catalog	Milford P. Webster	Salisbury, MD
Computing Canada Online	(416)497-5263	Adjunct to Excellent Canadian PC Newspaper	Computing Canada Newspaper	Willowdale, Ontario
Crosstalk Communications BBS	(404)740-8428	Product Support for Crosstalk for Windows/MK4/XVI	Digital Communications Associates	Roswell, GA
Cul-de-Sac Bar & Grill	(508)429-1784	Multiline Service - Ham Radio - Humor - TDBS Applications	Pete White	Holliston, MA
CyberStore - a COCONET BBS	(604)526-3676	All lines to v.32bis/v.42/v.42bis. CyberTools for BBS'es	CyberStore Online Info. Systems Inc.	New Westminster, BC
DAK Online Resource Center	(818)715-7153	DAK Mail Order Catalog - Breakmakers - CD ROMS - Computers	DAK Industries/Tom Krogh	Canoga Park, CA
Dark Side of the Moon	(408)245-7726	Home of WAFFLE, Unix UUCP BBS Software for DOS and UNIX	Thomas E. Dell/Darkside International	Mountain View, CA
Data Bank	(913)842-7744	Information HQ, Support Board, Net-Mail & Files	Bob Oylar	Lawrence, KS
Data Core BBS	(310)842-6880	25 line Major BBS	Matthew Schoen/Delta Enterprises	Los Angeles, CA
DataLink RBBS System	(214)394-7438	Weather Satellite Imaging, NOAA Satellite Tracking-AMSAT-NA	Dallas Remote Imaging Group/Jeff Wallach	Carrollton, TX
Dawg Byte	(615)385-4268	ANSI Art Club 1:116/29	Kevin Snively	Nashville, TN
Deep Cove BBS	(604)536-5885	16 line TBBS, 3500 MBytes files for IBM, MAC, Amiga	Wayne Duval	White Rock, BC
Denver Exchange, The 104/909	(303)623-4965	Denver's Most Diverse Gay/Lesbian Info Service	James Craig	Denver, CO
Denver Free-Net	(303)270-4865	Free Community Online Service - Health Info	University of Colorado Health Science	Denver, CO
Distant Mirror BBS	(615)648-1782	Free Access BBS	Steve Perlo	Clarksville, TN
Distributed Info Service	(718)727-1456	Information Service	Joseph Bianco	Staten Island, NY
Duke Graphics of San Diego	(619)793-8360	7 CD Roms Online, 4 gigs 50,000 files	Chris Duke	San Diego, CA
EarthArt BBS	(803)552-4389	Wildlife/Conservation Art Gallery GIF Images	Ambassador Wildlife Gallery/Bob Chapman	North Charleston, SC
Ed-Net	(604)732-8877	Vancouver School Board Multi-Line Educational Network	Barry Macdonald/Vancouver Board of Ed	Vancouver, BC
Electric Ideas Clearinghouse	(206)586-6854	Energy Efficiency Efforts In Pacific Northwest-HydroElec	Bonnevillle Power Administration WSE	Olympia, WA
Electronic Publishers BBS	(303)624-4966	News-Finance-Sports-Games-2GB File Library	Brian Cash	Portland, OR
Electronic Zone, The	(412)349-3504	Specializing in Hypertext	William R. Forbes	Indiana, PA
Energy Info Admin E-Publications	(202)586-8658	Variety of Petroleum/Coal/Electricity Energy Statistics	US Department of Energy	Washington, D.C.
Entertainment & Graphics	(503)697-5100	Entertainment & Graphics	Jim Maxey	Lake Oswego, OR
eSoft Product Support BBS	(303)699-8222	Home of The Bread Board System (TBBS) BBS Software	Phil Becker/eSoft Inc.	Aurora, CO
Event Horizons	(503)697-5100	64 Line Digitized Graphics Image Library - Adult. GIF files	Jim Maxey	Lake Oswego, OR
EXEC-PC	(414)789-4210	Largest BBS in US - 280 Lines - 650,000 files - 35 Gigabytes	Bob and Tracey Mahoney	Elm Grove, WI
Executive Network	(914)667-4567	Interlink Netmail National Host - Multiline PCBoard System	Andy Keeves	Mt. Vernon, NY
Eye Contact BBS	(415)255-5972	22 line Oracom - Gay Issues - Popular Chat System	Bill Montgomery	Mill Valley, CA
Falken Support BBS	(703)803-8000	Support for FALKEN software - 16 lines - doors - chat	Herb Rose	Woodbridge, VA
Farwest BBS	(604)381-3934	Large Western Canada Galaticomm Info System	Ren L'Ecuier	Victoria, BC
FAX/Satellite Services BBS	(619)224-3853	NOAA Weather Satellite Images - Russian/Japanese Sat Pics	Scotty Olson	San Diego, CA
FCC Public Access Link	(301)725-1072	Equipment Authorization Status Advisory Service	Federal Communications Commission	Columbia, MD
FEDLINK ALIX II	(202)707-4888	Info on Federal Libraries - Excerpts Library of Congress News	Federal Library Information Network	Washington, D.C.
Fido Tech Stand	31-30-735900	Fidonet Technical Information for Holland	J. J. van der Maas	Utrecht, Holland
File Cabinet	(815)399-8978	Files, Games, Message areas		Rockford, IL
Fire & Ice	(313)373-8608	A Family BBS With Christians Discussions	William Sims	Drayton Plains, MI
Fisherman's Net	(614)837-0400	Dedicated to Fisherman	Lloyd Davidson	Carroll, OH
FOG City BBS 125/10	(415)863-9697	Gay Community BBS - AIDS Info - Desktop Publishing - MACs	Bill Essex	San Francisco, CA
Foundation Online Service	(203)968-8752	15+ Gigs 8 Lines Internet	David Deutsch	Stanford, CT
Fred the Computer	(508)872-8461	Newspaper BBS. Wierdnet Newswire. List of MA Libraries	Middlesex News-Adam Gaffin	Framingham, MA
FreeBoard BBS, The	(804)744-0797	Desktop Publishing File Distribution Network 1:264/212	Bill Hunter	Midlothian, VA

BOARDWATCH MAGAZINE

NATIONAL LIST OF ELECTRONIC BULLETIN BOARDS AND ON-LINE INFORMATION SERVICES - DECEMBER 1993

SERVICE	PHONE	DESCRIPTION	SPONSOR/SYSOP	LOCATION
Fun Connection	(503)753-8431	Multiline Entertainment - 8 Lines Games/Chat/News	Vincent Reece	Corvallis, OR
Galacticomm Demo System	(305)583-7808	Customer support for Major BBS	Galacticomm	
Garbage Dump, The	(505)294-5675	Online Chat Service - Adventure Games - National Chatlink	Dean Keri/Datasafe	Albuquerque, NM
Gateway Communications BBS	(714)863-7097	Novell Netware/TCP-IP Shareware Utilities	Carol De Jesus	Irvine, CA
Gateway On-Line	(313)291-5571	Interactive Chat, Multiplayer Games, Usenet/Internet E-mail	Jeff Bretnier/Bill Mullen	Rockwood, MI
GDP Technologies	(303)673-9470	Outstanding IBM Shareware on a small system	Tom Getty's	Lafayette, CO
General, The	(619)281-8616	Popular File Library - GIF Images	Marc Teitler	San Diego, CA
GISnet BBS	(303)447-0927	Graphics Information Systems/Mapping topics	Bill Thoen	Boulder, CO
GLIB	(703)578-4542	Gay and Lesbian Information Bureau - 11 Lines - 9600 bps	Community Educational Svcs. Foundation	Arlington, VA
GPO WINDO Online Service	(202)512-1387	Fed Information from EPA, DOE, State Department - others	US Government Printing Office	Washington, DC
Greenpeace Environet	(415)512-9108	Ecological and Peace Issues - Disarmament/Toxics/Wildlife	Dick Dillman/Greenpeace	
Hackers R Us Online	(602)945-8416	Online Games, Files & Tech Discussions	David Ray	Scottsdale, AZ
Hackers World BBS	(309)672-4405	Adult Files, Fidonet Echo-Mail Adult-net	Martin Belcke	Peoria, IL
Harris City Medical BBS	(713)790-1093	Medical Information	Monica Faulk	Houston, TX
Hayes Advanced Systems Support	(800)874-2937	Customer Support Line for Hayes Customers. V-series/Ultra	Hayes Microcomputer Products	Norcross, GA
Heartland Free-net	(309)674-1100	Community Online Service - Free Internet E-Mail Boxes	Peoria County Board/Bradley University	Peoria, IL
Herpnet/Satronics TBBS	(215)698-1905	Reptile and Amphibian Studies - Poison Snakes/Toads/Fish	Mark Miller	Philadelphia, PA
HH Info-Net BBS	(203)246-3747	MS Windows and OS/2 Files our specialty	Lee Winsor	New Hartford, CT
HoloNet	(510)704-1058	National Access, INTERNET, USENET, CHAT, GIFS, FILES	Information Access Technologies, Inc.	Berkeley, CA
HouseNet BBS	(410)745-2037	Home Fixup/Repair/Renovation Tips, Advice, and Articles	Gene and Katie Hamilton	St. Michaels, MD
Howard's Notebook 1:280/25	(816)331-5868	Environmental, Peace, Justice since 1982 - 4 nodes	Jim Howard	Kansas City, MO
Hystercs	(613)231-7144	Amiga File Distribution Network 1:163/109	Russell McOrmond	Ottawa, Ontario, Canada
IBM National Support Center BBS	(404)835-5300	IBM PC User Groups Database - Newsletter Exchange	IBM National Support Center	Atlanta, GA
Inbound/Outbound/Teleconnect	(212)989-4675	Telephone Sales Trade Magazine Online Service	Harry Newton Publications	New York, NY
Index Systems	(404)924-8414	Excellent list of Atlanta BBS systems online	Rodney Aloia	Marietta, GA
Infinite Space Online	(407)856-0021	32 Line Interactive Chat & Games Majornet	Charlie Scherker	Orlando, FL
InfoHost Demo BBS	(201)335-2253	Demo BBS for InfoHost BBS Software - Multiline - Database	A-Comm Electronics Inc.	Hasbrouck Heights, NJ
Inns of Court, The	(214)458-2620	LAN Related Files and Utilities 1:124/6101	Arthur Geffen	Dallas, TX
Intel PCEO Support BBS	(503)645-6275	Support for Intel PC Products - Inboard 386/AboveBoard 286	Intel Corporation PCEO Division	Hillsborough, OR
InterComm	(702)359-2666	6 Line 5.5 Gig 30,000 Files	Roger Brown	Spark, NV
InterMail Tech Support BBS	(305)436-1884	Home of InterMail, Front End Mailer for FidoNet 1:369/102	Patrik Bertilsson	Hollywood, FL
Invention Factory	(212)274-8110	46 Lines - 100 Directories - Full Usenet Feed - 8.2 GB	Mike Sussell	New York, NY
Investor's Online Data	(206)285-5359	Online Investment/Stock Market Information/Tech Analysis	Don Shepherdson	Bellevue, WA
JDR Microdevices BBS	(408)559-0253	Online Hardware Order - Catalog - 1.1 GB Files - Quizzes	JDR Microdevices	San Jose, CA
JOBS	(404)992-8937	Online Job Listings - 2186 Technical Pos. - 10,000 Corps.	Alpha Systems Inc./Bill Griffin	Roswell, GA
Keith Graham Shareware Support	(914)623-0039	OPTIK, TEXT2COM, CBOOT, very good shareware utilities	Keith P. Graham	Nyack, NY
KIMBERLY BBS	(612)340-2489	Prime Rate-Fed Funds-T-Bill-Discount Rate-Economic Data	Federal Reserve Bank of Minneapolis	Minneapolis, MN
King's Market BBS 104/115	(303)665-6091	400 MB Books, Writers Area - TRS 80 Support	Jim and Karen Burt	Boulder, CO
Knight Vision BBS	(213)344-3600	Chess and Backgammon - 8 lines - "Intelligent Entertainment"	Matthew Beelby	Pasadena, CA
Lace's Place	(718)882-3552	Female Domination Adult BBS online since 7/91	Ellen Grogan	New York City, NY
LANtastic BBS	(602)293-8065	Support for LANtastic local area network	Artisoft Inc.	Tucson, AZ
Late Night Software 125/555	(415)695-0759	Home of UFGATE - Software to connect PCs to UUCP/Usenet	Tim Pozar	San Francisco, CA
LegalEase	(509)326-3238	Legal issues/Forms - Law BBS List	Bill Sorcinelli	Spokane, WA
Lincoln Cabin BBS	(415)752-4490	General Interests & Rime	Steve Pomerantz	San Francisco, CA
MAC-LINK	(514)486-8959	Macintosh Oriented Support BBS - 6 Lines - Infomat/BIX	Mark Smith	Montreal, Quebec
Macalot Bulletin Board	(412)846-5312	Support for Second Sight BBS Software for Macintosh	Jeff Dripps/FreeSoft Company	Beaver Falls, PA

MacCircles	(303)526-2219	Mac System Software distributor, mail, sigs, files	Patricia O'Connor	Golden, CO
MacInternational	(803)798-3755	Macintosh support since April '85. FirstClass BBS	Ralph Yount	Columbia, SC
Magpie BBS	(212)420-0527	Support/Demo System for Magpie BBS/Conferencing Software	Steve Manes	New York, NY
MaxiHost Support BBS	(209)836-2402	MaxiHost BBS - small, very easy to run BBS	Don Mankin	San Ramon, CA
Mayan Antiquities	(214)691-1316	Mayan Culture and Antiquities	Ron Whipple	Dallas, TX
McAfee Associates BBS	(408)988-4004	Computer Virus Information - VIRUSCAN and CLEANUP	John McAfee/CVIA	Santa Clara, CA
Med Technet	(716)688-1552	A BBS for Medical Info	Bill Hliwa	East Amherst, NY
Meeting Works, The	(212)737-6932	Meeting/seminar/convention planning information	John Mackenzie	New York, NY
METRO Online Entertainment	(212)831-9280	32 line DLX with City Guide/Ski Database - Matchmaker - Chat	Bruce Kamm/Metro Online Services	New York City, NY
Micro Foundry, The	(415)598-0398	2.2 GB Downloads - Your Online Software Source - Boardwatch	Thomas Nelson/Clockwork Software	San Jose, CA
Micro Message Service	(919)779-6674	USA Today/Boxoffice Magazine - Large Download Area	Mike Stroud	Raleigh, NC
Microsim Technical Support BBS	(206)649-9836	Support for Popular R:Base Relational Data Base System	Microm Corporation	Redmond, WA
Microsoft Download BBS	(206)936-6735	Windows Technical Notes and Support Information	Microsoft Corp/Scott J. Honaker	Bellevue, WA
Microsystems Software Inc.	(508)875-8009	HandiWare Software for Handicapped - CodeRunner C Utilities	MSI - Reed Lewis	Framingham, MA
MindVox	(212)989-4141	Internet Access, E-Mail, Newsgroups, ftp/telnet	Phantom Access Technologies	New York, NY
Minnesota Spacenet	(612)920-5566	Minnesota Space Frontier Society - NASA News	Ben Husset	Minneapolis, MN
MOG-UR'S EMS, The	(818)366-1238	5 Lines - 8 Networks CD-ROMS - 2.8 GB Hub Services HST/V.32	Tom Toimpidis	Granada Hills, CA
Monterey Gaming System	(408)655-5555	A Custom Multi-user BBS with Conferencing and Custom Games	David Janakes	Monterey, CA
Mountain Air BBS	(703)427-0226	Adult Based BBS	Edward Lee Wood, Jr.	Roanoke, VA
Movie BBS	(718)939-5462	Movie Reviews and Information - Television	Clarke Ulmer	New York, NY
N.A.C.D. BBS	(912)246-3280	Cave Scuba Diving - Superb Special Topic System	National Assoc. of Cave Divers	Gainsville, FL
N8EMR Ham BBS	(614)895-2553	login:hbbbs HAM Radio/AMSAT Unix System - Satellite/Packet	Gary Sanders	Westerville, OH
NAPLPS Graphics BBS	(613)727-5272	NAPLPS Graphics Terminal and Editor Software	MicroStar Corp.	Nepean, Ontario
NASA Spacelink	(205)895-0028	NASA Educational Affairs Div. - Flight Data/Space History	Marshall Space Flight Center	Huntsville, AL
Nashville Exchange	(615)383-0727	12 line TBBS - Games/TBBS Software Development 1.8 GB	Ben Cunningham	Nashville, TN
National Genealogical BBS	(703)528-2612	Family History - Genealogical Research - Gravestone Haunting	National Genealogical Society	Arlington, VA
Netcom Internet Guest System	(408)241-9760	Internet Access System - type "guest" at login for info.	Netcom Online Communications Services	San Jose, CA
Network World Bulletin Board	(508)620-1178	LAN and WAN Issues and Technology	Network World Magazine/CW Communications	Framingham, MA
Newbed	(506)453-2147	Educational System K12 Net	William Brydges	Frederickton, NB
Newton Express BBS	(215)943-6606	14.5 Gigs/700+Sigs 18 Lines Large Adult Section USA Today	Anthony Maglietta	Newton, PA
Night Shift, The	(818)955-5155	16 lines/chat/Usenet Newsgroups/InternetMail/USATODAY	Charles Hilt	Burbank, CA
NIST ACTS	(303)494-4775	Automated Computer Telephone Service - Sync PC to NBS Time	Nat. Institute for Standards/Technology	Boulder, CO
NOAA Space Environment Lab	(303)497-5042	Solar Flare/Geomagnetic Data Online	National Oceanographic/Atmospheric Admin	Boulder, CO
NoGate Consulting	(616)530-3392	Home of PAK archive utility	Mike Neuhaus Gus Smedstad	Grand Rapids, MI
North Castle BBS	(507)281-8292	Minnesotas #1 RPG BBS	Rob Richter	Rochester, MN
O&E Online	(313)591-0903	Free Community BBS, Editorial Text from Newspapers	Greg Day	Livonia, MI
OAQPSITTN	(919)541-5742	Air Quality Planning and Standards Technology Transfer Net	Environmental Protection Agency	Research Triangle Park, NC
OASIS BBS	(404)627-2662	Home of Atlanta Bulletin Board List - ABBL	Robert Orr/Online Atlanta Society	Decatur, GA
Occupational Health/Safety BBS	(212)385-2034	Job Safety Issues for Artists, Musicians, Entertainers	Mike McCann/Center for Safety in Arts	New York, NY
ODYSSEY	(818)358-6968	Largest Adult Based Entertainment Service In North America	Michael Allen	Monrovia, CA
Odyssey	(818)358-6968	Adult Multiline Chat System - Games - Magazines - Downloads	Michael Allen	Monrovia, CA
OERI BBS	(800)222-4922	Educational Statistics and Data - Performance Stats -	US Department of Education	Washington, D.C.
Old Colorado City Communications	(719)632-4111	Political Discussions - Unix UUCP Public Access - Multiline	Dave Hughes	Colorado Springs, CO
Online Now	(807)345-5522	Canada's shareware house is online now	Gary Walsh/Tom Haavisto	Thunder Bay, Ontario
Online With Hayes	(404)446-6336	Hayes Public Bulletin Board - Conferences/SIGS/Support	Hayes Microcomputer Products	Norcross, GA
Oracle PC	6108 260-6222	South Australian TBBS Multiline System	Don Crago	Pooraka South Australia
Oracom Support BBS	(612)894-5879	Sales and Support for Oracom Multiline BBS Software	Surf Computer Services	Minneapolis, MN
Osprey's Nest	(301)989-9036	Birdwatching, Bird feeding, Naturalist/Ecology Issues	Fran and Norm Saunders	Colesville, MD
Ozone Hole, The	(504)891-3142	Boardwatch-USA Today-Internet-Usenet-RIME	Mike Mathews	New Orleans, LA
P.D.S.L.O. BBS	(516)938-6722	Home of THE LIST National BBS List	James Toro	Hicksville, NY
PacComm BBS	(813)874-3078	Packet Radio Equipment Supplier - TNC/PSK Modems	Gwyn Reedy/PacCom Inc.	Tampa, FL
PC Junction BBS	(615)478-2890	Smartnet Throbneth 100,000 Files & Online Magazines	Douglas Carpenter	Cleveland, TN
PC Ohio	(216)381-3320	Shareware library with 100% USR HST access - 24 lines	Norm Henke	Cleveland, OH

BOARDWATCH MAGAZINE

NATIONAL LIST OF ELECTRONIC BULLETIN BOARDS AND ON-LINE INFORMATION SERVICES - DECEMBER 1993

SERVICE	PHONE	DESCRIPTION	SPONSOR/SYSOP	LOCATION
Pennywise	(800)752-3012	Online Office Supply Sales Service	Pennywise	Edmonston, MD
PHYSICS Forum BBS	(413)545-1959	Physics and Astronomical Sciences	Univ. of Mass. Dept. of Physics/Astronomy	Amherst, MA
Pinecliff BBS 104/28	(303)642-7463	Large Shareware Library/Echomail Conferences since 1985	Craig Baker	Pinecliffe, CO
Pinnacle Software BBS	(514)345-8654	Support for Sapphire BBS Software	Timothy Campbell/Pinnacle Software	Montreal, Quebec
Pipeline, The	(209)592-9861	Construction topics for contractors, suppliers, public works	Michael W. Adams	Fresno, CA
PKWare BBS	(414)354-8670	Home of PKZIP 1.10 Compression Utility	Phil Katz/PKWare Incorporated	Glendale, WI
Pleasure Dome	(804)490-5878	Sexually Explicit Fantasy Chat System - Adults only	Tom Terrific	Tidewater, VA
Practical Peripherals BBS	(805)496-4445	Support BBS for Practical Peripherals Modems	Practical Peripherals	West Lake Village, CA
ProComm Support BBS	(314)875-0503	Home of ProComm 2.4.3 and ProComm Plus Comm Prgrms	Thomas Smith/DataStorm Technologies Inc.	Columbia, MO
Promised Land, The	(715)387-1339	16-Line/2.5GB/11,000+ Files/WINDOWS, Chat & More	Tim Brown/Computer Solutions	Marshfield, WI
Public Brand Software BBS	(317)856-2087	Commercial Shareware Vendor	Public Brand Software	Indianapolis, IN
Public Connection	(817)738-7336	Public Files	Joe Coles	Ft Worth, TX
QMail Deluxe Support BBS	(615)230-8822	Support for QMail Deluxe and 1stReader offline mail utils	Mark (Sparky) Herring	Germantown, TN
Qualitas, Inc. BBS	(301)907-8030	386MAX and BlueMAX Memory Management Software Support	Qualitas Inc.	Bethesda, MD
Quarterdeck BBS	(310)314-3227	Technical Support for OEMM, DESQview, all Quarterdeck Prods	Quarterdeck Office Systems	Santa Monica, CA
QuickBBS Support BBS 363/34	(407)896-0494	Product Support for QuickBBS Software	Richard Creighton/Steve Gabrilowitz	Orlando, FL
Random Access Information Svc.	(503)695-3250	11,000 GIF Images - 20,000 DOS/Windows Shareware Files	Janice Stevens	Corbett, OR
Ronin BBS	(214)938-2840	Traditional File and Message BBS	Chuck Mattern	Red Oak, TX
Rose Media	(416)733-2780	19 GB - Home of Rosemail - Publications/Conferences	Vic Kass	Willowdale, Ontario
Rusty & Edies	(216)726-0737	Large ML PCBoard run by Husband and Wife - NFL/Tradewars	Rusty and Edwina Hardenburgh	Boardman, OH
Sahara Club BBS	(818)893-1899	Land-Use issues, Off-Road, Timber, Conservation	Patrick Martin/Sahara Club	North Hills, CA
Sailing IC BBS	(301)643-1466	National sailing system, yacht racing and clubs, tall ships	Darren Albert	MD
Salt Air BBS	(801)261-8976	Home of PCBoard BBS Software - National List of PCB Sys	Clark Development Company/David Terry	Murray, UT
San Diego NeXT User's Group BBS	(619)456-2522	Support for NeXT Computers	Brian Dear/San Diego NeXT User's Group	San Diego, CA
SBA Online	(800)697-4636	Advice for Small Business Owners on Financing/Management	Small Business Administration	Washington, DC
Science Resource Studies BBS	(202)634-1764	Federal R&D Budget - Technical Labor Market Statistics	National Science Foundation	Washington, D.C.
SDN Project, The 1:141/840	(203)634-0370	The Original Software Distribution Network	Ray Kaliss	Meriden, CT
SEAboard!	(804)442-6047	Support system for ARC, SEADOG, and AXE software	System Enhancement Associates	Nassawadox, VA
Seagate Technical Support BBS	(408)438-8771	Installation and Specifications for Hard Drive Models	Seagate/Bill Rudok	Scotts Valley, CA
Searchlight BBS	(516)689-2566	Support system for Searchlight BBS Software	Searchlight Software	Stony Brook, NY
SemWare Support BBS	(404)641-8968	Home of QEDIT - A Supert Shareware Text Editor	Sammy Mitchell/SemWare Software Products	Marietta, GA
SENDIT	(701)237-3283	North Dakota K-12 Educational Net-telnet sendit.nodak.edu	Gleason Sackman/NDU	Fargo, ND
SIGCAT BBS	(703)648-4168	CD-ROM /Optical Publishing Info - Lists of Gov. CD Data	SIG on CD-ROM Applications and Technol.	Gathersburg, MD
Sistema Profesional Informacion	525 590-5988	Largest BBS in Mexico - Spanish Language TBBS	Tecnologia Uno Cero S.A. de C.V.	Mexico City
Skeleton Closet, The	(804)671-8547	Genealogy Programs File Distribution Net 1:271/23	Debbi McKay	Virginia Beach, VA
Society for Technical Comm. BBS	(703)522-3299	STC Job Service, Freelance Registry - Technical Writers	Society for Technical Communication	Washington, D.C.
Software Creations BBS	(508)368-4137	Home of Apogee Software/Commander Keen Series	Dan Linton	Clinton, MA
Sound Advice BBS	(816)436-4516	Twenty Line PCBoard with 2 Gigabytes Storage - HST Modems	Roy Timberman	Gladstone, MO
Source for Source, The	(516)968-7824	Source code - large LINUX file collection	Erik VanRiper	Bay Shore, NY
Space BBS	(415)323-4193	Multi Node BBS for Engineers	Owen Hawkins	Menlo Park, CA
Spectrum Online Systems	(719)576-6853	Graphics Based Service, Full Internet Access	Chris Phillips	Colorado Springs, CO
Star-Link Network BBS	(718)972-6099	9-nodes, 2.1GB, Ilink, 75,000 programs	Michael Keylin	Brooklyn, NY
Starlink BBS	(915)235-4818	Technical Support for Predictive Maint Customers	John Land	Sweetwater, TX
State and Local Emergency Mgmt.	(202)646-2887	Hazardous Materials/National Dam Watch/Emergency Info	Federal Emergency Management Agency	Washington, D.C.
Stream	(718)349-8137	Connection to the World of New York Book Publishing	BookStream	Brooklyn, NY
Sun Valley Net	(208)726-1435	Information & Files on environment & outdoors	Stephen Schwegert	Ketchum, ID

Superdemocracy Foundation BBS	(305)370-9376	Online Democracy/Political Culture for the Future	Tim Stryker	Davie, FL
T-80 BBS	(403)246-4487	3.6 Gigs, 4 CD Roms 7,000 GIFS 20,000 Shareware Programs	Brian Simpson	Calgary, AB
TAXACOM	(716)896-7581	Botany, Herbaria, FLORA ONLINE Newsletter, Latin Translation	Clinton Herbarium, Buffalo Museum	Buffalo, NY
TEAMate Unix Bulletin Board	(310)318-5302	Demo/Support for TEAMate BBS Software for Unix	Bob Baskerville/MMB Development Corp.	Manhattan Beach, CA
Telebit Support BBS	(408)745-3229	Support for Telebit Modems	Telebit Corp.	Sunnyvale, CA
Telegodzilla	(503)621-3746	Home of ZModem File Transfer Protocol/YModem/YAM	Chuck Forsberg/Omen Technology Incorp.	Portland, OR
Telepath	(415)358-8641	DBMS/Dr. Dobbs Journal Magazine Online Service	M&T Publishing	Redwood City, CA
Telux Support BBS	(919)481-9399	Support Service for Telix Communications Software	Jeff Woods/deltaComm Development	Cary, NC
The Back Room	(718)849-1614	America's Largest Exclusively Gay DB - Home of Gaycomm	Fred Kohn	Richmond Hill, NY
The Business BBS	(619)576-0049	Business Related Files & Info	Doug Rowan	San Diego, CA
The Business BBS	(310)477-0408	Utilities/Support for Microsoft Windows	Jim Appleby	Los Angeles, CA
The Club House BBS	(908)272-2073	ADA, OSHA, RTN, 18 CD Roms Online & 30+ Games	George Porcella	Cranford, NJ
The Easidside BBS	(407)337-1274	Family Oriented BBS Files, Conferences and Online Games	David Lane	Port St Lucie, FL
The Electronic Grapevine	(707)257-2338	Local Online Message and Info Provider, Rime Node	Dick Wolff	Wapa, CA
The File Bank	(303)534-4646	16 Line File Library - Radio Comm/Astronomy - USA Today	Girard Westenberg/Brian Bartee	Littleton, CO
The Hot Heart of Tennessee	(615)890-8715	Home of hot programs, supports PC, Amiga	Larry Reeves	Murfreesboro, TN
The Ledge PCBoard	(818)896-4015	Home of Textview Door for PCBoard Systems	Joseph Sheppard	Tujunga, CA
The Liberty BBS	(714)996-7777	Nation wide Chat, E-Mail, Forums, games, CD-Roms, Online News	John Galt	Anaheim Hills, CA
The Opowd Crowd	(708)885-8865	Specializing in outdoor activities and sports	George Peace	Hoffman Estates, IL
The Other BBS 1:1/0	(717)657-2223	Fidonet Zone Coordinator for North America 1:1/0	Whole Earth Electronic Link	Harrisburg, PA
Thunderbolt BBS	(415)332-6106	Unix Conferencing System - \$15 monthly plus \$2 Hourly	John Schreiber	Sausalito, CA
Tiger Team Buddhist Info Network	(510)268-0102	America's Buddhist Online Service	Gary L. Ray	Berkeley, CA
Titan BBS	(904)476-1270	Adult BBS - Online Games - GIF Images	Clayton Manson	Pensacola, FL
Tool Shop BBS	(818)891-6780	Home of HS-Link and other tools for PCBoard Systems	Sam Smith	
Town Hall	(800)648-6964	Conservative Political Conference and Debate	National Review Magazine	New York, NY
Trinity 1 BBS	44 392 410210	United Kingdom Distributor of Boardwatch Magazine	John Burden	Exeter Devon, U.K.
TurBoard	(404)395-6327	NAPLPS Graphics BBS System	Software@work	Chattanooga, TN
U.S. Robotics - Sit UBU Sit	(708)982-5092	Support for US Robotics HST 9600 bps Modems	U.S. Robotics Corporation	Skokie, IL
US Naval Observatory BBS	(202)653-1079	Time - Date - Sunrise - Sunset - Enter @ TCO for Commands	US Department of Commerce US Naval Obser	Washington, D.C.
USDOE BBS	(202)260-9950	Currently available grants and contracts for Education	U.S. Dept. of Education/George Wagner	Washington D.C.,
USGS Quick Epicenter Determin.	(303)273-8672	Earthquake Epicenter Data - Geomagnetism 7E2 800-358-2663	US Geological Survey Earthquake Info Cnt	Denver, CO
USNO Time of Day for Clocks	(202)653-0351	Xmits ASCII Time String - Sync Your PC to USNO Atomic Clock	US Naval Observatory	Washington, D.C.
UT Library Online Catalog	(512)471-9420	Online Library Card Catalog Listing 3.5 million entries	University of Texas at Austin	Austin, TX
WeatherBank	(800)827-2727	Online Weather Forecasts for Any City - Download Radar Data	Steve Root/WeatherBrief Data Services	Salt Lake City, UT
Western Digital Tech Support	(714)753-1068	Hard Drive/Controller Installation and Config Data	Western Digital Corporation	
Westside, The	(213)933-4050	Area's Largest/Most Active Adult System-Chat, E-mail, Games,	Dave Harrison	Los Angeles, CA
Wildcat HQ BBS 210/12	(805)395-0650	Multiline Support System for Wildcat BBS Software	MSI - Mustang Software, Inc.	Bakersfield, CA
Windsor Manor	(203)688-4973	Over 27 Online Adventure Games	Jim Taylor	Windsor, CT
Wizard's Gate, The	(614)224-1635	Multi-Line Totally Free BBS-Multi Player Games, Files, Message	Joseph G. Balshine	Columbus, OH
Word Perfect Customer Support	(801)225-4444	Word Perfect 4.2/5.0/5.1 Support/Printer Drivers	Word Perfect Corporation	Orem, UT
Worldview BBS	(510)676-2919	Reformed Protestant Topics; Telefinder Host	Bill Gram-Reefer	Concord, CA
WWIV Support BBS	(310)208-6689	Support for WWIV BBS Software	Wayne Bell	Rolling Hills Estates, CA
XTree BBS	(805)546-9150	Support for XTree Pro Gold DOS Shell Program	XTree Company	San Luis Obispo, CA
XyQuest Support BBS	(508)667-5669	Support for XyWrite Word Processor - Custom Keyboard Files	XyQuest Inc. - Christine Madsen	Bellerica, MA
Yellow Dream Machine BBS	(512)451-3222	Disability Rights Issues - Variety of Disability Newsletters	Bill Scarborough/Cyanosis Rex	Austin, TX

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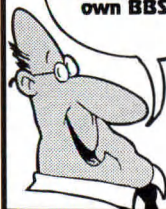
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Global Power	Major Goose	Remote Console
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Searchlight BBS



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RIP support, not RIP service

Beauty—like our competition's RIP support—is only skin deep. They still display text in 20-line chunks. They make you press *Enter* to confirm choices. And make you tag items by typing line numbers.

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Searchlight believes in doing things first, and getting them right. In 1987, we released the first BBS with a full-screen editor. In 1988, we added Lotus-style menus. In 1993, we were first with RIP support.

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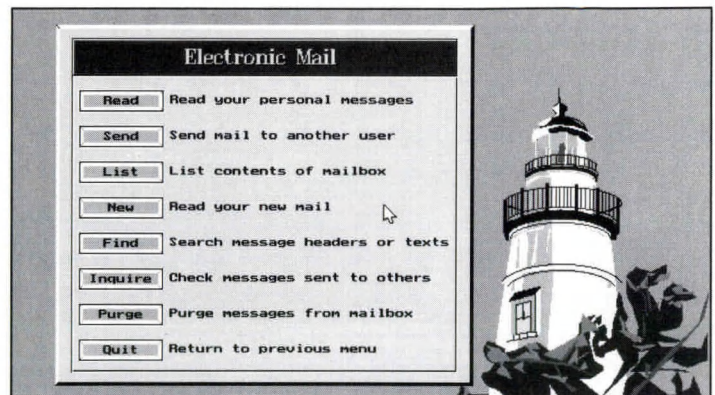
No fine print

Callers like the things Searchlight 3.5 does. Sysops like the things Searchlight won't do.

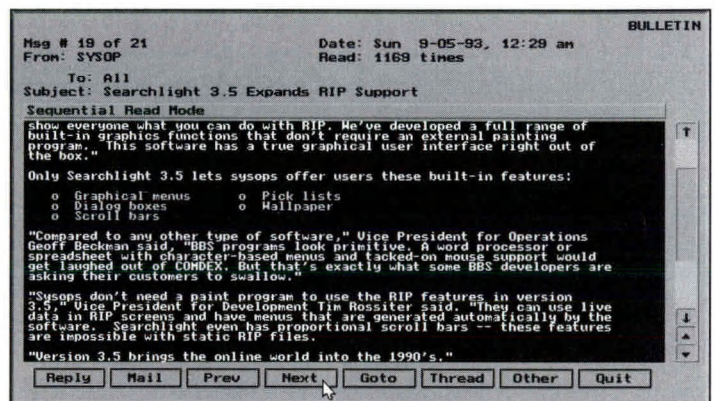
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And we don't want to sell you a terminal program. We include TeleGrafix's RIPterm with every copy of Searchlight, so you can give every new caller a free, RIP-compatible terminal.

So call us for your demo of Searchlight 3.5 today. And see why our sysops and their callers say that Searchlight just isn't like the other GUIs.

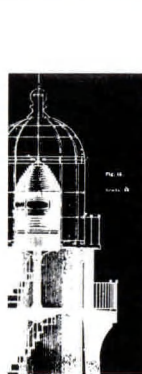


The lighthouse was an existing RIP screen. The RIP menu on it was automatically generated by Searchlight.



The scroll bar on our RIP message reader lets you read mail line by line. To jump anywhere in the message quickly and easily, click on the bar.

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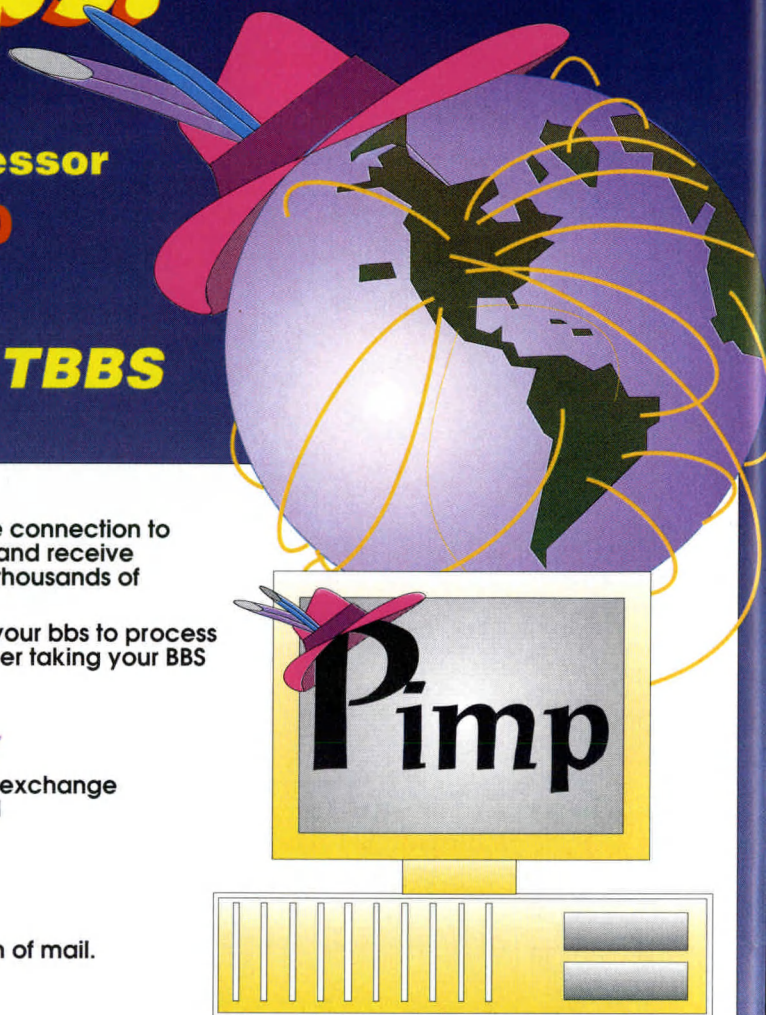
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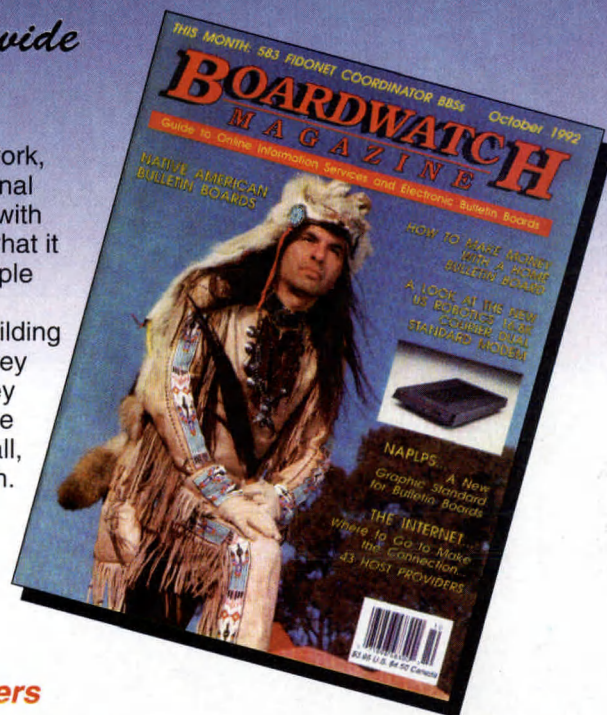
MAGAZINE

Guide to Online Information Services and Electronic Bulletin Boards

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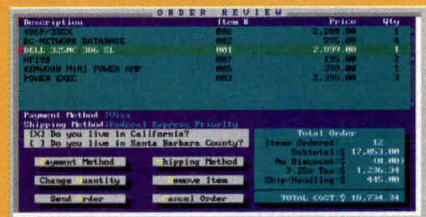
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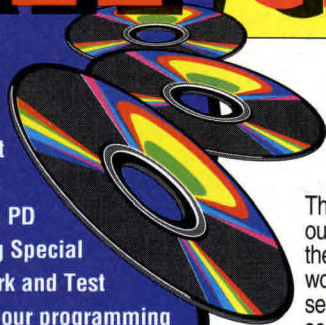
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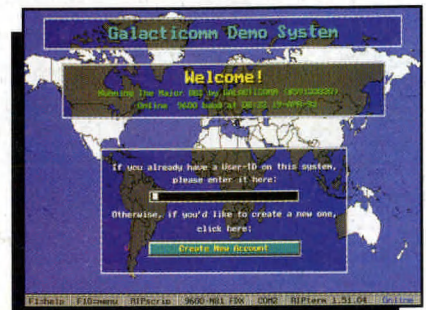
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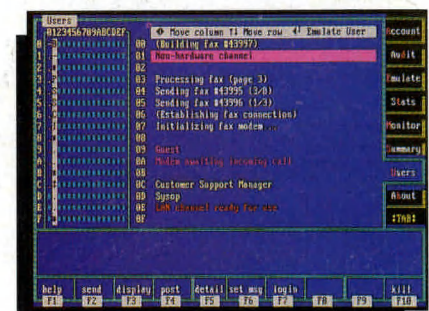
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